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ROMA, 1951 – TIPOGRAFIA DEL SENATO DEL DOTT. G. BARDI.

CONTENTS

FRANK E. BROWN – Cosa I, history and topography 5

MARION LAWRENCE – Additional asiatic sarcophagi 115

Citations and abbreviations after *AJA* 54 (1950) 268-272.

COSA I
HISTORY AND TOPOGRAPHY

BY

FRANK EDWARD BROWN

FORWARD

The American Academy in Rome has been enabled since 1948 to make soundings and conduct excavations on the site of ancient Cosa by the permission cordially granted of the Ministry of Public Instruction of the Republic of Italy and by the generous enthusiasm of the owners, Marchese and Marchesa San Felice di Monteforte. The enlightened comprehension of the Director General of Antiquities and Fine Arts, Dr. G. De Angelis D'Ossat, has been equalled only by the sympathetic interest of the Superintendent of Antiquities for Etruria, Professor Antonio Minto. Our work at Cosa has been constantly stimulated by the intelligence and experience of our inspector, Dr. G. Maetzke, and its burdens eased by the unfailing zeal of Assistente Gino Tozzi. The Honorary Inspector of Antiquities for Orbetello, Dr. Pietro Raveggi, has been prodigal of his store of wisdom and eloquence. To each and all of them the following pages owe much.

They essay to collect and interpret the written sources bearing on the history of Cosa and to examine the remains yet visible on its site. In the historical sketch no account has been taken of various early and mistaken attempts to situate Cosa on some other site than its own, nor of the more recent but no less fallacious effort to found a new Cosa on the river Sele.[1] The ancients had no doubt where Cosa lay, nor do we.

The study of the ruins is founded on a thorough exploration and mapping of the site carried out in May 1948. All the visible remains were described, measured, drawn and plotted at a scale of 1 : 100 or 1 : 200. The survey was based on a grid of fifty-meter squares laid down over the entire surface enclosed by the walls. The grid is oriented to the cardinal points, and its intersections are marked by pegs set in concrete and levelled. The levels in meters-above-sea-level were established by reference to Point 41 of the geodetic survey of the Istituto Geografico Militare, which is situated at the extreme southern tip of the site. The results of the survey have been incorporated in a general plan at the scale of 1 : 500 (Pl. III). The map of the hill of Ansedonia at 1 : 2000 (Pl. II) is based on a recent survey carried out for the subdivision of the hill into building lots and the laying out of roads; the map of the Ager Cosanus (Pl. I) on the map of Italy at 1 : 100000 of the Istituto Geografico Militare.

[1] E. Pais, *MemLinc*, ser. 5, 17 (1923) 331-333.

In the basic work of the survey the author was assisted by Doris M. Taylor, Lawrence Richardson and Robert E. Hecht. Further exploration, carried on during subsequent campaigns of excavation, has been shared in to a greater or less degree by all the members of the party at Cosa. Observations and conclusions alike have been tested and retested in critical discussion. In the impossibility of justly measuring out his debt to each of the above and to Lucy T. Shoe, Emeline Hill, Myra Uhlfelder, Paul MacKendrick and Bertram Berman, the writer tenders them this general and sincere acknowledgement.

This study by its nature is both sweeping and superficial. The conclusions drawn from it must share these vices. They are put forward, as it is hoped they will be received, tentatively, experimenti causa.

Frank Edward Brown
American Academy in Rome
January 1951

TABLE OF CONTENTS

	PAGE
FORWARD	7
HISTORY	12
SITUATION	23
STREET PLAN	24
FORTIFICATIONS	28
BUILDINGS	58
Materials and Construction	59
The Arx	63
Temple A	69
The Eastern Height	69
The Forum	71
Gateway	73
Basilica	75
Temples B and C	78
Aerarium	81
Market Building	82
Baths	82
Reservoirs and Cisterns	84
Houses	89
THE PORT	89
TOMBS	96
DATE	102

(Drawings by the author. Photographs: Figs. 3-6, 9-16, 19, 23, 33, 36, 59, 60, 64, 65, 70, 71, 75, 76, 81, 84 by Bertram Berman; Figs. 53, 77, 78, 85-87 by Robert E. Hecht; Figs. 58, 61, 62 by Gino Tozzi; Figs, 1, 2, 7 by U. S. Army Air Forces; the rest by the author).

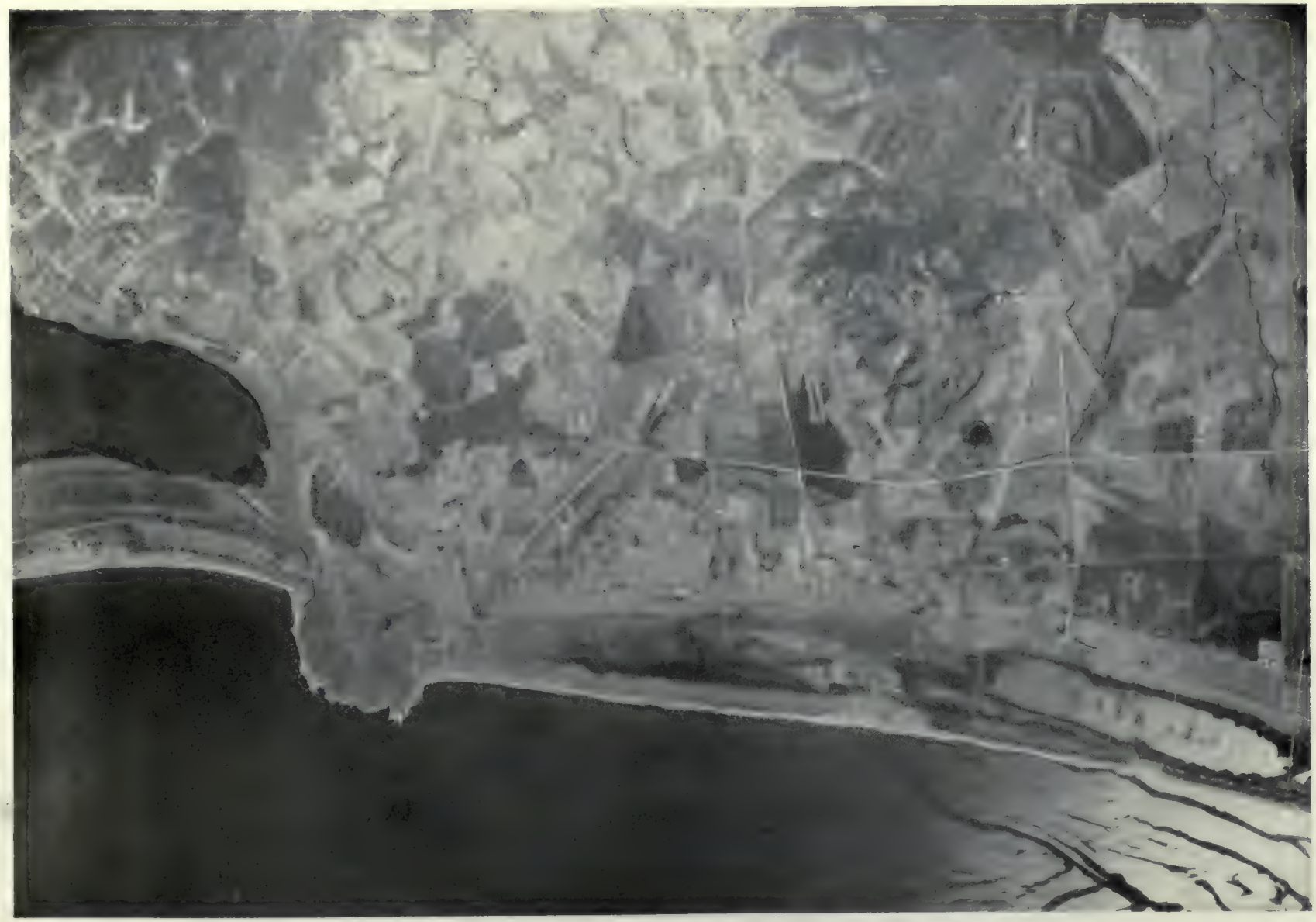

Fig. 1. – Cosa and its Hinterland.

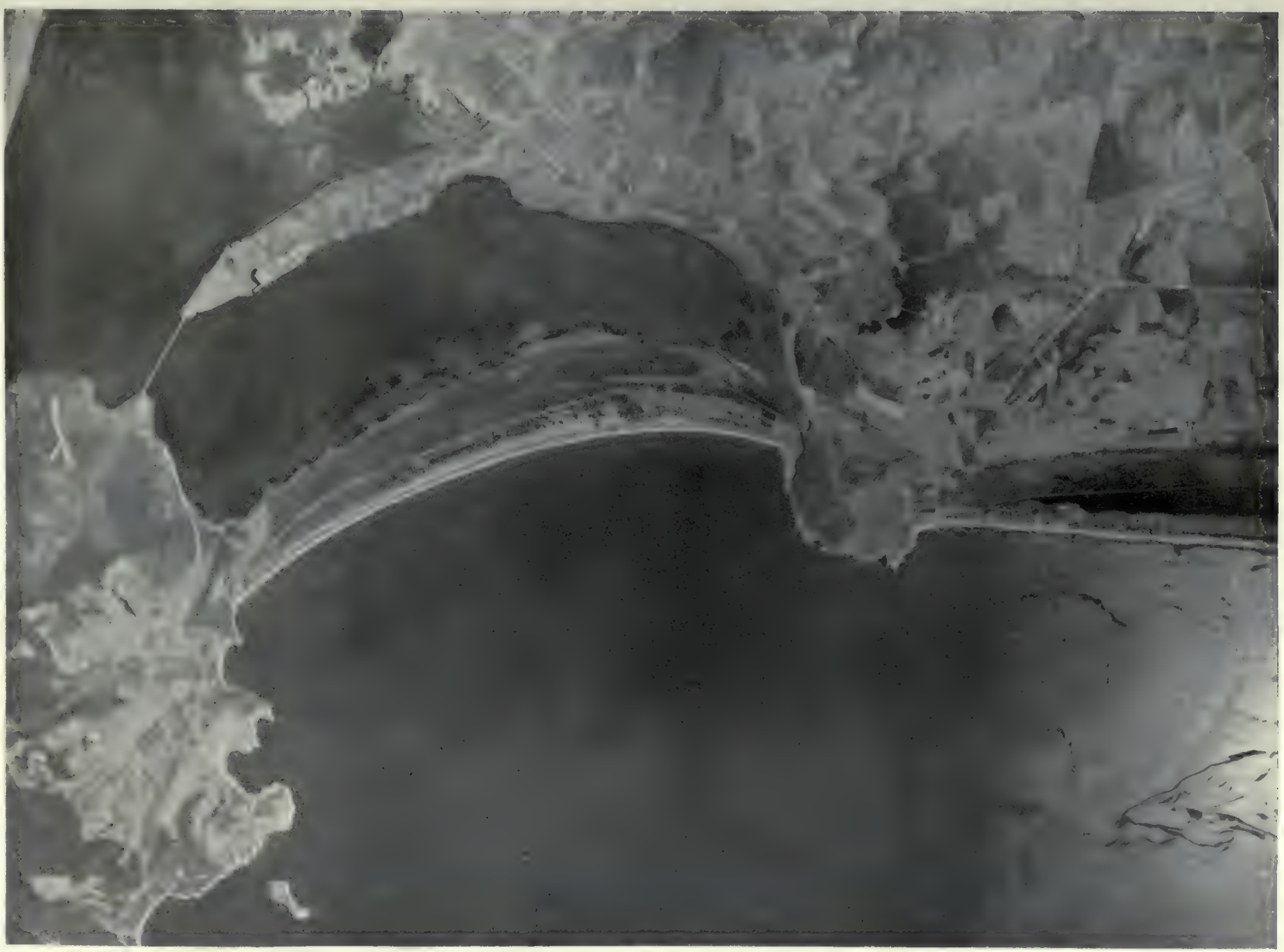

Fig. 2. – Cosa, Port'Ercole, Lagoon of Orbetello.

HISTORY [2]

The hill of Ansedonia (Pl. I, Figs. 1, 2) lies on the coast of Tuscany 138 kilometers northwest of Rome. It juts for half its circumference into the sea just southeast of the landlocked lagoon of Orbetello and just opposite the mountain peninsula of Argentario. On the landward side a narrow valley, through which run the Via Aurelia and the railroad, separates it from the mountainous hinterland.

The site is one of rare beauty and vantage (Pl. II). The hill is a mass of grey limestone, riddled with natural clefts and caverns. It is roughly oval in shape with its main axis running NNW-SSE and rises to a height of 114 meters above the water. Along the seaward side are sheer cliffs 20 to 45 meters high, broken only at the southwest by a tiny cove. All about the ascents above are steep and rocky, save on the north and northeast, where a ridge and gentler slopes descend to the valley. To the west stretch the long incurving beach and dunes of the Tombolo di Feniglia, joining Ansedonia to Argentario; to the east, beach, dunes and the depression of the Paglieto della Tagliata and Lago di Burano. It is a hill high and difficult enough of approach to be easily defensible, not too high or difficult to be readily accessible.

In ancient times the advantages of Ansedonia's position were even more marked than they are today (Pl. I). It was the hub of the lands and waters round about. The coastal strip to the east was not then, as now, a waste of

[2] The first circumstantial description of the ruins of Cosa and its surroundings was given by Giorgio Santi in his *Viaggio secondo per le due provincie senesi* (Pisa 1798) 126-152. A map of the site, drawn in 1809, was published by G. Micali as Tav. IV of his *Antichi monumenti per servire all'opera intitolata l'Italia avanti il dominio dei Romani* (Florence 1810), and has formed the basis of all subsequently published maps up to the present. The fullest account of the history and topography of Cosa and the Ager Cosanus is that of R. Cardarelli, "Confini fra Magliano e Marsiliana; fra Manciano e Montauto Scerpenna Stachilagi; fra Tricosto e Ansidonia; fra Orbetello e Marsiliana; fra Port'Ercole e Monte Argentario (28 dicembre 1508–2 marzo 1510)", *Maremma, Bollettino della Società Storica Maremmana* 1 (1924) 131-142, 155-186, 205-224; 2 (1925) 3-36, 75-128, 147-213. The description, however, of the ruins of Cosa itself, given by G. Dennis, *Cities and Cemeteries of Etruria*[3] 2 (London 1883) 245-254, remains unsurpassed. Since Cardarelli's work useful contributions have been made by Doro Levi, "Escursione archeologica nell'agro cosano", *StEtr*, 1 (1927) 477-485, by P. Raveggi, "Ville imperiali romane nell'agro cosano", *Maremma* n. s. 2 (8) (1933) fasc. 3, pp. 3-8 and "Ansedonia", *Grosseto, Bollettino mensile di statistica* 15 (September 1937) 3-9, and by M. Fasciato, "A travers la Maremme Toscane, Cosa et Roselle", *Mél*, 58 (1941-1946) 272-279.

sand and marsh. In the depression behind the dunes that fringe the sea ran a long narrow lagoon, of which the modern Lago di Burano is the remnant (Fig. 3). From the foot of Ansedonia it stretched away to the southeast some 20 kilometers as far as the mouth of the Tafone. Into it the Tafone, the Chiarone and the lesser torrents of the hinterland poured; through it they made their way to the sea. Never more than 800 meters broad, it formed a natural fishery and waterway.[3] To the northwest the lagoon of Orbetello (Figs. 4, 5), whether still in process of formation or already landlocked, made a second shallow, placid sheet of water dominated by the hill.[4] Westward across the bar of Feniglia rose the wooded heights of Argentario with a broad open bay between (Fig. 6). The eastern shore facing Ansedonia opened in the deep sheltered cove of Port' Ercole. All these waters, then as now, teemed with tunny and sardines, eels, anchovies and other fish. To the north and east behind the fat lowlands of the Maremma extended the rough mountain masses, of which the hill was the southernmost tip. They were interspersed with well watered upland valleys and pastures and traversed northward from Ansedonia by the viable Valle d'Oro through the Radicata valley to the Albegna and Marsiliana.

The hill of Ansedonia may well seem predestined for human habitation from the earliest times. The nearby Monti dell'Uccellina and the neighboring island of Giglio have revealed sporadic traces of neolithic man.[5] In chalcolithic times men lived or buried in the caves about the base of Ansedonia, as they did on the opposite shore of Argentario.[6] History, however, knows only the town of Cosa, which crowned the top of the hill. Strabo describes it clearly, as he lists the seacoast towns of Etruria from north to south. "After Populonia, Cosa, a city somewhat above the sea. In a bay there is a high hill, upon which is the town. The Port of Herakles lies opposite. Nearby is a lagoon, and on the promontory above the bay there is a lookout for tunny."[7]

To Vergil Cosa was an ancient city of the Etruscan shore.[8] To Pliny it was *Cosa Volcientium*, the colony or port of Vulci.[9] The name itself appears

[3] Cardarelli, *op. cit.* (*supra*, n. 2) 1, 186, 217 f.

[4] The question of when the lagoon of Orbetello assumed its present form is still open; Cardarelli, *op. cit.* (*supra*, n. 2) 1, 208-217; *StEtr* 3 (1929) 355 f. It was, at any rate, well before the time of Strabo 5. 2. 8; *Rassegna Numismatica* 1 (1904) 34; 2 (1905) 49–51.

[5] C. Regnoli, *Il nuovo cimento* 27 (1868) 73-80; Cardarelli, *op. cit.* (*supra*, n. 2) 1, 222; *BPI* n. s. 5-6 (19-20) (1941-42) 236.

[6] *StEtr* 1 (1927) 477 f.; *BPI* 25 (1899) 307; *NS* (1912) 428-430; *Archivio per l'antropologia e la etnologia* 42 (1912) 258-265, 329-333, 385 f.

[7] Strabo 5. 2. 8.

[8] *Aeneid* 10. 168.

[9] *NH* 3. 5 (8).

Fig. 3. – Port and Eastern Lagoon.

Fig. 5. – Tombolo di Feniglia and Lagoon of Orbetello.

Fig. 4. – Lagoon of Orbetello, looking toward Telamon.

Fig. 6. – Argentario and Port'Ercole.

to be Etruscan and to have had the original form of *Cusi or *Cusia.[10] The logic of topography and history, the analogy of the ports of other inland Etruscan centers, like Caere and Tarquinia, would bear out this evidence. *Cusi, on this showing, will have been strongly planted on the hill above the westward end of the long waterway, which brought shipping to and from within ten kilometers of Vulci, dominating Argentario, the lagoon of Orbetello and the back country. She will have been a bulwark before Telamon, 20 kilometers away to the north in the territory of Volsinii, with shipping, fisheries and the coastal highway under her ward.

Of this early period we know as yet little enough. The necropolis of the sixth to third centuries B. C. on the isthmus of Orbetello seven kilometers distant has been taken by some for the cemetery of Etruscan Cosa.[11] In 1870, however, a chamber tomb was unearthed " nella vicinanza dell'antica Cosa ", which was reported to contain paintings similar to those of the Tomba Campana at Veii, i. e. of the early sixth century B. C.[12] Though the tomb and its precise location are alike lost, observations of earlier explorers of the neighborhood support the presumption that it lay in a necropolis on the south slope of the hill Malabarba, which faces Ansedonia on the north a kilometer away.[13] For the rest, the immediate vicinity has yielded scattered but significant traces of Etruscan settlement, including Bucchero of the sixth century from Pescia Romana, Roman *Ad Nonas*, on the north bank of the old lagoon of Vulci.[14]

Cosa, in fact, like other cities of ancient Etruria, only emerges from the twilight of prehistory through contact with Rome. That contact begins in 273 B.C., when the Latin colony of Cosa was planted.[15] Seven years before the consul Coruncanius had crushed rebellious Vulci and Volsinii and, on the eve of the first campaign against Pyrrhus, had bound them to a treaty.[16] By

[10] M. Pallottino, « Nomi etruschi di città », *Scritti in onore di B. Nogara* (Rome 1937) 343-345, 352, 354, 356. An Etruscan origin has also by some been sought for the name Ansedonia, of uncertain etymology: Cardarelli, *op. cit.* (*supra*), n. 2) 2, 12 n. 2, 84 n. 1; *Mél*, 48 (1941-1946) 272 f.

[11] *BdI* (1867) 145-147; R. Del Rosso, *Pesche e peschiere antiche e moderne* (Florence 1905) 2, 306-308. The looting of the necropolis went on from 1820 to 1870: *Nuova collezione di opusculi* 1 (Florence 1820) 131; F. Carchidio, *Memorie storiche dell'antico e moderno Telamone* 1 (Florence 1824) 75–109; G–B. Thaon, *Antologia* 33 (1829) 138-140; *BdI* (1829) 7 f.; (1830) 254; (1849) 66-68; (1851) 37 f., 147-149; (1858) 103-105. A few objects from it eventually entered the Archaeological Museum at Florence: *NS* (1885) 241-248. Fragments discarded by the looters have been found in recent public works: *NS* (1927) 210-213; (1936) 408-413; cf. *Historia* 1 (1927) 18–21.

[12] *BdI* (1870) 36; cf. G. Bovini, *Ampurias* 11 (1949) 63-90.

[13] *Antologia* 33 (1829) 138-140; L. Canina, *L'antica Etruria marittima* (Rome 1846) Tav. CXIII bottom; *BdI* (1851) 7–9.

[14] L. A. Milani, *Museo topographico dell'Etruria* (Florence 1898) 108; Cardarelli, *op. cit.* (*supra*, n. 2) 2, 22 n. 3, 118 n. 1; *StEtr*, 1 (1927) 483-485.

[15] Vell. Pat. 1. 14. 7; Livy *Per.* 14.

[16] Fasti Triumph. Capit., *Inscriptiones Italiae* XIII, 1 pp.73, 545; Appian *Sam.* 10. 3; Zonar. 8. 44; Livy *Per.* 11.

it they were deprived of their territories along the seacoast, along the Albegna and the upper reaches of the Fiora and its tributaries. Vulci and Volsinii, like Caere and Tarquinia, were deliberately cut off from direct access to the sea and to northwest Etruria.[17] Now, two years after the final defeat of Pyrrhus, these conquests were secured by the planting of the first Roman colony in Etruria proper.

Cosa was a Latin colony of, we may presume, the normal 2500 or 4000 families, a minimum of 7500 or 12000 settlers in all, administered by duumviri with the title of consuls or praetors. Its territory, if we may assume with Cardarelli that its limits were preserved in the mediaeval ecclesiastical and feudal boundaries, was relatively vast, between 500 and 600 square kilometers. It stretched from the Albegna and its tributaries, the Elsa and Elsarella, on the north to the sea on the south, from the region of Pescia Romana and the Tafone on the east to Argentario on the west and included the islands of Giglio and Giannutri (Igilium and Dianium) (Pl. I).[18] From the outset the function of the colony was to mount guard over Rome's newly acquired marches, to affirm Rome's name and supremacy in the restive neighborhood of Vulci, Volsinii and Rusellae and to bolster the new inland praefecturae of Saturnia and Statonia.[19] For the purpose the site of Cosa, the finest natural position on this coast, was the obvious choice. Rome's new concern with the sea was, no doubt, also of weight. The promontory of Argentario was throughout antiquity an obligatory point of call for all naval or mercantile vessels moving westward to Corsica and Sardinia, Gaul or Spain.[20] The harbor of Cosa in the end of the eastern lagoon and that of Portus Herculis across the bay were the best available between Gaeta and La Spezia. That of Cosa made a strongly defended potential naval base, sufficiently close to the sources of timber and naval stores necessary to create the fleets Rome was soon to need. Cosa and Paestum, founded in the same year in newly seized territory, reflect the same naval strategy. Its symbol is the dolphin, which appears on some issues of the coins of the colony,[21] its expression the formidable works of the harbor entrance.[22]

[17] G. De Sanctis, *Storia dei Romani* 2 (Turin 1907) 398; *Mél* 33 (1913) 238; K. J. Beloch, *Roemische Geschichte* (Berlin 1926) 455–458; A. Afzelius, *Die roemische Eroberung Italiens* ("Acta Jutlandica, Aarskrift for Aarhus Universitet" XIV, 3, Copenhagen 1942) 117, 183-185.

[18] Cardarelli, *op. cit.* (*supra*, n. 2) 1, 183 f; 2, 17 f., 86-89, 188 f. Other estimates are smaller, e. g. A. Afzelius, *op. cit.* (*supra*, n. 17) 69.

[19] Festus, *Gloss. Lat* 339; Vitr. *De Arch* 2. 7.3; Pliny *NH* 36. 68; cf. Beloch, *op. cit.* (*supra*, n. 17) 445, 565 f., 608.

[20] E. g. Livy, 22 11. 6; 30. 39 1-2; Rut. Namat. 1. 293 f.

[21] J. Eckel, *Doctrina Nummorum Veterum* I (Vienna 1792) 1, 90; Head, *Hist. Num.* 16; R. Garrucci, *Le monete dell'Italia antica* 2 (Rome 1885) 74-76, Tav. LXXXII 23-25; A. Sambon, *Les monnaies antiques de l'Italie* 1 (Paris 1903) 11, 35, 82 f.; *Berliner Munzkatalog* 3, 1, 34; *BMC* Italy, 69; *NS* (1888) 682-691; *StEtr*, 5 (1931) 589.

[22] *Infra* 89-96.

The annals of the colony are sparse. The notices that have come down to us cluster for the most part about the second Punic war and the civil wars of the first century B. C. Of the young colony's role in Rome's naval effort during the first Punic War, and particularly in the campaigns in Sardinia and Corsica, we know nothing. The battle of Telamon in 225 was fought almost at her gates. [23] In 217 we find Cosa on the supply lines to Spain and the scene of a naval disaster. [24] She stood fast throughout the war, furnishing her quotas of men and supplies. The cost to her may be reckoned from the fact that in 199 she demanded and two years later got a fresh draft of 1000 colonist families. [25]

The following century was probably the most flourishing of the colony's existence. Cosa will have shared in the intensified economic life which followed the great eastern conquests. She will have profited alike by the continuous wars in Spain and by the rapid urbanization of central and north Italy. In her immediate hinterland the old praefectura of Saturnia became a citizen colony in 183, and, probably somewhat later, the colony of Heba, near modern Magliano, absorbed the territory of Telamon. [26] These strenuous years saw the construction of Cosa's main arteries of communication by land, the Via Aurelia, pushed on from Forum Aurelii, and the road link with the Via Clodia, which from Cosa ran north through the hills to Caletra and thence up the valley of the Albinia to Saturnia (Pl. I). [27] We catch a glimpse, in 137, of C. Hostilius Mancinus on his way to disaster at Numantia, boarding his ship at Portus Herculis and coasting to Spain over Genoa. [28] The activity of the period is well represented by a hoard of second century asses found on the Tombolo di Feniglia. [29]

Two incidents in the civil strife of the early first century B. C. have as their background the thriving commerce that then still filled Cosa's port. In 87, Marius with his scanty following from Africa landed nearby at Telamon. His proclamation of freedom for slaves brought in malcontents, both slaves and free peasants, in such numbers that in a few days he loaded forty ships with the pick of them. These vessels he must have commandeered for the most part in the ports of Cosa. [30] Again, ten years later, in 77, Lepidus, defeated by Catulus, led

[23] Polyb. 2. 21-31; *Mél* 30 (1910) 385-395; *Maremma* 1 (1924) 1-25; *StEtr* 5 (1931) 147-154.

[24] Livy, 22. 11. 6; cf. Polyb. 3. 96. 7-10.

[25] Livy, 27. 10. 8–9; 32. 2. 7; 33 24. 8-9.

[26] Livy, 39 55; Ptol. *Geog* 3 1 43; *NS* (1919) 199-206; Beloch, *op. cit.* (*supra*, n. 17) 608. Cf. *Maremma* n. s. 3 (9) (1934) fasc. 3, pp. 3-8; *StEtr* 9 (1935) 11-59; *NS* (1943) 15-20; (1947) 49-54.

[27] *Tabula Peutingeriana* Segmentum IV, 4; *Mél*, 33 (1913) 241-243; Cardarelli, *op. cit.* (*supra*, n. 2).1, 167, 186; 2, 207; A. Afzelius, *op. cit.* (*supra*, n. 17) 69, 117.

[28] Val. Max. 1. 6 7; Jul. Obsequens *Prod. Lib.* 24.

[29] *Rassegna Numismatica* 1 (1904) 34; 2 (1905) 49-51; *Memorie dell'Istituto Italiano di Numismatica* 2 (1915) 181-185.

[30] Plut. *Mar.* 41. 2.

his remaining forces to Cosa, where he found means to embark them for Sardinia. What proportion of the fifty-three cohorts later transferred by Perperna to Sertorius were so conveyed we do not know, but the shipping required must have been considerable. [31]

The circumstances of Marius' levy, at the same time, illustrate the profound social and economic changes that were already taking place in the area. The Ager Cosanus here appears as a region of great latifundia, peopled by dissatisfied slaves and tenant farmers. The small freeholder of the brisk and booming second century is disappearing. The slave gangs and coloni of the great landlords have come to cultivate or graze his lands. Tiberius Gracchus is said to have been moved by the spectacle as early as 137, as he passed up the Via Aurelia on his way to Numantia. [32] The ruins of the villas of this period still flank the Aurelia and the road to Saturnia in Cosan territory. [33] In this process the fortress colony on the hilltop was bound to lose more and more her livelihood. With the Romanization of the countryside, with the end of local warfare and the pacification of the western Mediterranean, the military and naval grounds for her existence vanished. It is difficult to assess the impact of the Social and Civil wars. That Cosa was deeply affected would seem plain. [34] The bases of her prosperity and population were thus progressively and steadily undermined. For lively diversified local production and exchange was substituted large-scale specialized exploitation for export. The allotments of her colonists were absorbed in the great estates. Their descendants drifted to the City or the armies.

A generation after Lepidus the process was far advanced. When in March of 49 L. Domitius Ahenobarbus, paroled at Corfinium, reached his estates in the Ager Cosanus to raise a force for the occupation of Marseilles, he enrolled his own slaves, freedmen and peasants. To transport them he requisitioned, not the shipping which in former times he would have found in the ports of Cosa, but seven galleys *Igili et in Cosano a privatis coactas.* [35] These *naves actuariae* were the light, swift galleys or barges of the great estates of the neighborhood. Portus Cosanus evidently no longer thronged with naves onerariae.

The same relentless causes of early and rapid decline affected the entire Maremma. Strabo's description of Populonia in the late first century B.C. would have applied with equal force to Cosa: *The town is wholly deserted except*

[31] Sall. *H.* 1. 82 (ed. Mauernbrecher); Plut. *Sert.* 15. 2; Appian, *BCiv.* 1. 13 108; Jul. Exsuperantius, 7; cf. Rut. Namat. 1. 295-298; Serv. *ad Aen.* 10 168.

[32] Plut. *Ti. Gracch.* 8. 7.

[33] *StEtr* 1 (1927) 479-482; *Maremma* n. s. 2 (8) (1933) fasc. 3, pp. 3-8.

[34] Cf. Appian, *BCiv.* 1. 89 and the evidence of Talamone, *NS* (1888), 689-691.

[35] Caesar, *BCiv.* 1 34; cf. Cicero, *Att.* 9. 6. 2; 9. 9. 3.

for the temples and a few dwellings, but the port town is better peopled.[36] This is precisely the picture that is suggested by the study of the surface remains at Cosa.[37] When, in 16 A. D., Clemens, the slave of Agrippa Postumus, fled with his master's ashes from Planasia to Cosa, he found the place so solitary that he was able to hide himself *ignotis locis* for some time.[38] Augustus' attempt to recolonize Graviscae was unsuccessful and was not to our knowledge repeated elsewhere in the Maremma.[39] Malaria was probably both a contributory cause and an effect, closely related to the neglect and gradual silting up of the coastal lagoons, the stoppage of their channels to the sea and their progressive stagnation.[40]

Malaria was, at any rate during the first two centuries of the empire, not sufficiently noxious to arrest development of the latifundia in the Ager Cosanus. Most of the remains of the great villas which dot the shores of Giglio, Giannutri, Argentario and the mainland appear to date from this period.[41] One such arose by the foot of the hill of Cosa at the entrance of her little-used harbor in the eastern lagoon, built in part over the stagnating basin, complete with landing stairs, apsidal exedras, mosaic pavings.[42] The abandoned city on the hilltop scarcely existed save as a landmark and center of worship.[43] What town life there was in the vicinity clung about the small market and landing places that served travellers, the villas and their people.

Of the Portus Cosanus of the old colony nothing more is heard, though in the middle ages what was left of it apparently served as a local haven, Porto di Tagliata.[44] The chief anchorage was now Portus Herculis across the bay, linked

[36] Strabo, 5. 2. 6. His description of Cosa (5 2. 8; *supra*, 13) is that of one who passes at sea, having the landmarks pointed out without going ashore.

[37] *Infra*, 69, 112.

[38] Tacitus, *Ann.* 2. 39. 2. *Cosam* is the universally accepted reading of Lipsius for the uncertain *coram* or *cosam* of the Mediceus. There is no reason to suppose, as some commentators have (e. g. Nipperdey-Andresen[9] (1892), 169, n. 3; Furneaux[2] (1896) 331) that by *Cosam, promunturium Etruriae* Tacitus meant Argentario rather than the promontory of Cosa itself.

[39] *Lib. Colon.* 220 L; E. Pais, *Storia della colonizzazione di Roma antica* (Rome 1923), 175 f.; cfr. Rut. Namat. 1. 281 f.

[40] H. Nissen, *Italische Landeskunde* 1 (Berlin 1883) 413–418; H. Dessau, *Geschichte der roemischen Kaiserzeit* 2 (Berlin 1926) 412 f.; M. I. Rostovzev, *Storia economica e sociale dell'Impero Romano* (Florence 1933) 553 n. 19. In the case of Cosa itself it is possible that Rutilius' apologetic version of the story of an invasion of rats (1. 287–292) conceals the fact of a local or otherwise unreported visitation of the plague.

[41] Suet. *Vesp.* 2 1; *Maremma* n. s. 2 (8) (1933) fasc. 3, pp. 3-8.

[42] *BdI* (1867) 145-147; *Historia* 1 (1927) 2, 21-24: *NS* (1927) 204-210; *StEtr* 1 (1927) 447-449.

[43] Pompon. *Chorog.* 2. 72; Ptol. *Geog.* 3. 1. 4; *It. Ant. Marit.* 513-514 Wess.; *It. Ant.* 289-292 Wess.

[44] Livy 22. 11. 6; 30. 39. 1; *Maremma* 6 (1931) 15 f.

to the mainland and the Via Aurelia by a *compendium* over the Tombolo di Feniglia.[45] The crossroads of Via Aurelia and the road link to Via Clodia lay in the plain to the northeast of the hill of Cosa. Here there grew up the station of Succosa (i. e. sub-Cosa), settled perhaps by stragglers from the old colony above. Its position is clearly indicated by the Itineraries and the Tabula Peutingeriana, by an approach road from the Via Aurelia flanked by tombs and by the ruins of the ancient church of San Biagio.[46] It was probably the seat of the *Respublica Cosanorum*, of which we have record under Caracalla and Gordian III.[47] The *Portus Cosa* of the Itineraries apparently lay to the northwest of the hill, an anchorage at the inner end of the Tombolo di Feniglia. It survived in the middle ages as *Portus Feniliae*.[48]

In Cosa itself what life had remained in the temples flickered out during the third century.[49] Most of the great estates had by this time been swallowed up in the imperial Ratio Privata.[50] When, in 416, Rutilius descried from at sea "the ancient, unguarded ruins and grim walls of desolate Cosa", it was the home only of legend.[51] Its inhabitants of old, the story ran, had shared the fate of Sennacherib's host and Bishop Hatto. And so it remained through the dark centuries of Goth, Byzantine and Lombard, while its very name was lost and it mysteriously became Ansedonia, a mighty and forbidding remnant of the past, about which legends might be woven and strange tales told.

So it reappears in the early middle age, *Civitas Ansedonia*, legendary nest of rapacious Saracens, miraculously purged by Charlemagne with the help of San Biagio, where about the millennium a church or monastery huddled briefly amid the ruins.[52] So it continued, empty and demon-haunted[53] until the false renaissance of the thirteenth century brought an evanescent return of life to the Maremma. From about 1200 until 1319 Ansedonia was the fief of a certain Catello de Guglielmo and of his descendants, two of whom bore the name Tan-

[45] Strabo 5. 2. 8; *It. Ant. Marit.* 497-499 Wess.; *Tabula Peutingeriana* Segmentum IV, 4; Rut. Namat. 1. 285-298; cf. *Mél* 30 (1910) 375-381.

[46] *Rav. Cosm.* 4. 32; 5. 2; *Tabula Peutingeriana* Segmentum IV, 4; Cardarelli, *op. cit.* (*supra*, n. 2) 2, 21, 80-82; cf. *Mél* 30 (1910) 377 f.; 58 (1941-1946) 374 f.

[47] *CIL* XI, 2633, 2634.

[48] *Rav. Cosm.* 4. 32; 5. 2; Ministero della Marina, *Monografia storica dei porti dell'antichità nella penisola italiana* (Rome 1905) 224 f.; Cardarelli, *op. cit.* (*supra*, n. 2) 2, 20, 86; *Bullettino Senese* (1935) 215.

[49] *Infra* 69.

[50] Thus in the *Liber Pontificalis* (pp. 183, 189 Duchesne) Argentario is listed as *insula Matidiae*, presumably after Trajan's niece, its revenues assigned to the church of SS. Pietro e Marcellino in Rome.

[51] *De Reditu Suo* 1. 285 f.

[52] Cardarelli, *op. cit.* (*supra*, n. 2) 2, 86-98.

[53] Fazio degli Uberti, *Dittamondo* 3. 9.

Fig. 7. – Cosa, Hill and Port Area.

credo de Catellino. Vassals of the Aldobrandeschi, and after 1274 of the branch of Santa Fiora, they took a modest part in the interminable local broils of the period, until the second Tancred ceded his lands, probably already in the hands of a band of freebooters, to the town of Orvieto.[54] Finally, in August 1329, a Sienese army dislodged the outlaws and destroyed their fortifications, *ne aliquando latrones et predones illuc confugere valerent, seque moenibus tueri.*[55]

Thenceforward, untenanted and unsown, Cosa moldered undisturbed through the centuries, well guarded by a dense coppice of wild olives, ilex and brambles. Only an occasional determined traveller or treasure-seeker penetrated the walls, visible to all who passed on the highway or railroad beneath. It has remained for the last decade to see some clearing of the undergrowth, some pruning and grafting of the olives, some pasturing of flocks, while on the slopes beneath roads have been built and summer villas are beginning to appear.

SITUATION

The hill of Ansedonia (Pl. II, Fig. 7) is molded in three ridges: two longer, running NNW and SE; one shorter and more abrupt, whose axis is ENE. They swell to a somewhat flattened crest with two summits. The site of ancient Cosa on this crest is set off boldly by its walls. Their circuit of 1464.50 m. defines an irregular area of some 13.5 hectares (about 33 3/4 acres), which in shape roughly resembles an enormous skate with its head to the south. The area so defined by a line of strategic advantage embraces the twin summits at its south and east, but for the most part falls gradually below them on the north slope of the crest away from the sea. This north exposure, shielded from the direct blasts of the prevailing winds, is a canonical position,[56] and in this case was adopted despite the presence at the top of the long southeastern ridge of a broad, gently sloping area equally defensible and suitable for building. The seaward slopes of the hill, in fact, are at present stripped and bare, save for the sparse and stunted macchia, while the site of Cosa and the landward slopes are thickly grown with wild olives and underbrush.

From the three gates in the northwest, northeast and southeast fronts, now known respectively as Porta Fiorentina, Porta Romana and Porta Marina, roads descended the hillsides to the Tombolo di Feniglia, the Via Aurelia and the Port. The upper portions of the two northern roads are well-preserved. Long stretches

[54] Cardarelli, *op. cit.* (*supra*, n. 2) 2, 99, 111, 114 f.
[55] S. Titii, *Historiarum Senensium*, ms. Bibl. Com. di Siena, Cod. B. III. 6, t. II, 486.
[56] Vitr. *De Arch.* 1. 4. 1–4; 1. 6. 1–8, 12.

of the curbs on either side and in many places the paving blocks themselves, great polygons of local limestone, remain in place. Both roads, 4.45 m. or XV Roman feet in width, joined the Via Aurelia, which in antiquity skirted the foot of the hill. That from the northwest gate, after a short stretch of 60 meters perpendicular to the gate, turned NNW to run in a straight line just below the crest of the ridge (Fig. 8). It may be traced for some 550 meters to where modern quarrying and the railroad cutting have wiped it out. Some 65 meters above this point a branch turns off WSW toward the Feniglia. Of this, the *compendium* to Portus Herculis, only about 70 meters are now visible. The road from the northeast gate, steeply embanked, swings eastward down the north slope of the northeast ridge to a point 320 meters from the gate. Here it divides. One branch runs straight northeast for some 170 meters, until it too is amputated by the railroad just above its probable junction with Via Aurelia. The other may be followed for 270 meters, continuing to swing southeastward toward the Port. To the Port also descended the road from the southeast gate. Its first loop can be made out curving right from the gate around the end of a terrace or outwork, below which it runs ENE. Of its course down the steep eroded slopes of the hill there is no further trace.

Fig. 8. – Northwest Road.

STREET PLAN

The ground encompassed by the city wall (Pl. III) slopes gently up from northwest to southeast to an almost level saddle, 95 meters above sea level, between the southern and eastern summits. Slope, saddle and heights were the determinants of the town plan. The larger and loftier southern height formed the natural Arx (Figs. 9, 10). The eastern height, smaller and originally six

Fig. 9. – Arx from Eastern Height.

Fig. 10. – Arx from Tower 1.

or seven meters lower, made an eminence only less dominant (Fig. 11). The level plain between, well toward the harbor side of the whole area, became the civic center, the Forum. On the slopes was laid down a network of streets, crossing one another at right angles and enclosing rectangular blocks.

Fig. 11. – Eastern Height from Arx.

The alignment of the streets and their relative positions were fixed in reference to these principal physical features and in accordance with the general pattern of plan and the kind of communications sought. No influence of ritual or other theoretical considerations is discernable. The streets were laid out so as to take the utmost advantage of the natural contours. They cross the slopes with the minimum of grade attainable under a rigidly rectilinear scheme. As a result their mesh is almost diagonal to the cardinal points, the "cardines" at an angle of 39°, the "decumani" at an angle of 51° from true North. [57]

The principal arteries were five: Streets K and O and Streets 4, 5, and 6. Their distribution over the site was determined by the approaches from outside, themselves dictated by local topography, and by the positions of the Forum and the Arx. The main axes were Streets O and 5, which traversed the town from the NE and SE Gates and crossed near its geographical center, skirting the area of the Forum on two sides. Street 6 from the NW Gate led direct to the northwest end of the Forum, where it terminated at its junction with Street O. Street 4, passing along the northeast foot of the Arx, was the thoroughfare of the southwestern half of the town. Street K from the NW Gate led directly to the western quarter. Of the secondary streets, the position of P, the direct

[57] The "cardines", running NE–SW, are designated on the town plan (Pl. III) and in what follows by letters, the "decumani", running NW-SE, by numbers.

approach from Forum to Arx, was dictated by its relation to the central building on the Arx and to the short axis of the Forum. Street R was a similar approach from the Forum to the Eastern Height. Streets L, M, N, and Q further subdivided the large units of area and carried secondary traffic. The entire system was girdled by a pomerial street, following the line of the Walls some seven or eight meters from their base.

Streets O, 5 and 6 were designed to carry traffic both from within and without the town to and from the civic center as directly as possible. Streets O and 5, moreover, through the NE and SE Gates put the center in close communication with the Port.[58] The function of these arteries was essentially radial. None was a through avenue from gate to gate. The town could be traversed only by making one or more right-angle turns.

This street system was the dominant element in the organization of the town plan. The five principal arteries formed its armature and were distinguished from the secondary streets by their greater width. The rectangular or trapezoidal blocks into which the surface of the town was subdivided simply result from the location of the streets and therefore vary in size. They do not form an inflexible system of equal units of area rigorously imposed, of which the streets are merely separators, but themselves are the product of the functional dissection of the terrain by the streets. Where this dissection appears complete, save in the central series between Streets 5 and 6, the blocks are oblong, more than twice as long as wide. Between Streets 4 and 5, K and O they are 82.00 m. long and 32.50-37.00 m. wide.

The streets themselves are of three widths. The pomerial and secondary streets measure 4.45 m. or XV feet, the principal arteries 5.90-6.20 m., XX to XXI feet. The approach to the Eastern Height and the processional street within the Arx were each 8.00 m. or XXVII feet wide. All in their final state were paved with large polygonal blocks of local limestone. Here and there, notably on the Arx, in Street 4 near the crossings of Streets K, N, and O, in Street P, in Street 5 where it skirts the Forum and in Street O just inside the NE Gate, these paving blocks remain visible. Elsewhere they are buried under debris, and the streets are recognizeable as shallow depressions, rectilinear and uninterrupted. In many places they are bordered by stone curbs or directly by building walls. Occasionally the latter seem to be set back varying distances up to 2.50 m. from the edge of the street, apparently to form limited sidewalks.

[58] Apart from its location on the only naturally level ground within the town area, the eccentric position of the Forum may have been influenced by the considerations reflected in Vitruvius' precept (1 6. 1): *et si erunt moenia secundum mare, area ubi forum constituatur eligenda proxime portum.*

FORTIFICATIONS

The fortifications of Cosa consist of a Town Wall, enclosing the town, and an Arx Wall, partly enclosing the Arx on its townward sides. Both are of massive polygonal masonry of the local grey limestone. The Town Wall is exceptionally well-preserved, nowhere missing and standing in several places almost to its full original height. The Arx Wall, on the other hand, has suffered heavily from time and mediaeval rebuilding.

Fig. 12. – Southwest Front, Towers 9 and 8.

The Town Wall, with a development of 1464.50 m., envelopes both the Arx and the Eastern Height and follows the natural verge of the crest of the hill. Its trace (Pl. III) is therefore irregular, taking advantage wherever possible of steep declivities and rocky outcrops, but avoiding, as is expedient in polygonal walling, sharp salients and re-entrants. It is made up of some forty-two straight segments, generally meeting each other at obtuse angles. There is no trace of a ditch, though at various points, notably along the northern bulge and along the southwest front, quarrying produced irregular scarps. The circuit is pierced

toward the centers of its northwest, northeast and southeast fronts by three gateways and by a postern at the east angle of the Arx. It is reinforced by eighteen towers and four interior buttresses. There is evidence of an exterior abutment at the southwest salient of the Arx.[59]

The towers do not occur at regular intervals around the entire circuit, but are distributed in three distinct systems. The first, of ten towers (Towers 1-10), extends from the western end of the northwest front along the southwest front

Fig. 13. – Southeast Front, Tower 18.

as far as the Arx (Fig. 12). The towers are spaced with approximate regularity from 28 to 35 meters apart. The second, of six towers (Towers 13-18), extends from within the area of the Arx along the southeast front to include the SE

[59] Two large circular towers tangent to the inner face of the wall were observed by earlier explorers and carried on their plans and are continually referred to in more recent literature (e. g. Dennis, *op. cit.* (*supra*, n. 2) 2, 248; Cardarelli, *op. cit.* (*supra*, n. 2) 2, 14. They prove upon examination to be: *a*) the Arx Postern with the angle of the Arx Wall to the north of it; and *b*) a large semicircular foundation in Square XI–E (*infra* 71).

Gate (Fig. 13). Here the towers are from 27.50 m. to 31.5 m. apart. The third consists of Towers 19 and 20 on either side the NE Gate and respectively 43 and 47 meters from it.

This distribution corresponds in general to the nature of the terrain at the foot of the wall. The tower systems were introduced to enfilade the curtain and

Fig. 14. – Northeast Front, Towers 19 and 20.

eliminate the dead angle, where the foot of the wall was relatively easy of access. To this end Towers 1-10 and 13-18 approximate an ideal spacing of C feet or 29.60 m., effective bowshot by ancient standards. Towers 19 and 20 were more widely spaced to cover the fairly level field before the NE Gate and flank the approach by road (Fig. 14). Of the towerless stretches of the wall, the south angle of the Arx (Fig. 15) and the eastern salient between Towers 18 and 19 (Fig. 13) top precipitous slopes. The northern bulge between Tower 20 and the NW Gate crowns low cliffs, irregularly

scarped by quarrying and eight to ten meters in height. Only the level ground immediately before the NW Gate (Fig. 16) seems insufficiently covered by these dispositions.

The four interior buttresses (numbered in sequence with the towers, 11 and 12, 21 and 22) occur close together at the two salient southern angles of the Arx and on either side the NW Gate. Buttress 21 is 28 meters, Buttress 22 some 66 meters from the gateway and 30 from Tower 1. These structures, of which only the lowest courses remain, are probably to be understood as special

Fig. 15. – Arx Angle, Curtain 11–12.

devices to increase the defensibility of points where towers were not felt to be required. They are ill-placed to serve as foundations of stairs to the wall-walk and betray no structural necessity as counter forts. The curtains, however, on either side the NW Gate were, as has been noted, particularly vulnerable. Buttresses 21 and 22, then, presumably supported platforms, enlargements of the wall-walk, on which machines or a concentration of archers or slingers might be mounted. Buttresses 11 and 12 will have served the same purpose at the exposed south angle of the Arx.

The Town Wall is of homogeneous construction throughout. Obvious variations in style and fabric from one sector to another are only such as to have been caused by the qualities of the stone from different quarries, by the habits of individual masons etc. The absence of regular and effective bonding is merely the inevitable characteristic of all polygonal masonry. It is everywhere evident

Fig. 16. – Northwest Front.

that curtains, towers, buttresses and gateways were built all of a piece in a single period of construction.

The whole is of the revetment or retaining wall class, built on the slope below the interior ground level and supporting a considerable fill of earth. The exterior elevation is therefore much greater than the interior. The latter was normally only of a few courses, hardly more than a meter or two, though at points where the difference between inside and outside levels was slighter it might attain four or five meters to the wall-walk. The exterior height varied somewhat with the terrain, but was usually between eight and ten meters to the wall-walk. Just

west of the Eastern Height the northeast front stands almost ten meters high (Fig. 14). The height to the wall-walk from ancient ground level may be estimated

Fig. 17. – Curtain 13-14 from Tower 14.

in Curtain 9-10 as just under eight meters and at the NE Gate as 8.00 m. and more. Curtains still stand in several places six to seven meters above present ground level.

The field face of the curtains is battered, either from the ground up or beginning from a point one to two meters above ground level. The degree of

Fig. 18. – Curtain NE Gate-20, Inner Face.

Fig. 19. – Curtain NE Gate-20, Field Face.

batter is consistently of about 7 %. Where the curtain is preserved well up toward its full height, its thickness at the top regularly measures 1.85-1.80 m. If we assume an ideal width at the wall-walk of VI feet or 1.776 m., the curtain will normally have been 2.50-2.30 m. thick at the bottom (Fig. 30).

Fig. 20. – Curtain 19-NE Gate.

The material is the hard, grey, pitted limestone quarried from the hilltop itself. From a footing course laid on a level bed cut in bedrock the curtain is built up in two faces. Through-bonding does not occur, and the irregular interspace between the faces is packed with smaller stones, spalls and earth (Fig. 17). The slightly projecting footing course is here and there visible. The appearance of the limestone blocks as they came from the quarry may be judged from the inner face of the curtain, where they are left unworked, fitted roughly together and snecked with smaller stones (Fig. 18). The outer face was highly finished. It is of polygonal masonry with a tendency toward trapezoidal shapes

Fig. 21. – Curtain 9-10.

anathyrosis. The joint beds are from 0.25 m. to 0.45 m. deep. Joggles in both horizontal and oblique joints and small, normally triangular snecking blocks were regularly used. The blocks vary widely in size and shape but are rarely of colossal dimensions. A count of the blocks in 175 square meters of curtain gives an average block area of 0.75 m². or about eight square feet, an average weight of well over a ton. The entire surface was dressed smooth with a point.

No certain trace of the wall-walk or of its battlements has been observed. These, as will appear, may well have been of coursed rubblework. The north front of the salient which enclosed the Eastern Height bears evidence of having been repaired or strengthened in ancient times. This most ruinous sector of the and irregular coursing more marked in certain sectors of the wall than in others (Figs. 19, 20). There seems to be no general or consistent tendency, as some have thought, toward coursing and smaller blocks near the top (Fig. 21).[60] The effect of arching occurs only sporadically and near the base of the curtain (Fig. 22). The blocks are laid dry, tightly jointed, without

Fig. 22. – Curtain 13-14.

[60] Dennis, *op. cit.* (*supra*, n. 2) 2, 249; *RM* 12 (1897) 193–195; Cardarelli, *op. cit.* (*supra*, n. 2) 2, 13 f.; cf. R.A.L. Fell, *Etruria and Rome* (Cambridge 1924) 58 n. 1.

entire circuit shows traces of a rubblework patch or reinforcement, behind which a long gallery of random rubblework, some 3.50 m. wide, together with a cistern had been constructed.

The towers are square and set astride the curtain (Fig. 23). Their sides vary between 6.72 m. and 6.90 m. in length, and were perhaps ideally 6.81 m.

Fig. 23. – Towers 9 and 10.

or XXIII feet. Their projection both interior and exterior varies with the terrain and the angle of incidence of the curtains from 1.10 m. to 1.44 m. and from 3.37 m. to 3.92 m. All four faces were of finished polygonal masonry, like that of the outer face of the curtains, and a single course thick. The field faces show batter, less than that of the curtains and varying between 2 % and 4 %. The necessity of building bonded right angles causes the corner blocks to assume trapezoidal forms with horizontal beds (Fig. 24). Bonding between towers and

curtains was normally avoided because of the technical difficulties involved, but occurs often enought to demonstrate that towers and curtains were of one build (Fig. 25). The towers were solid to the height of the wall-walk, packed with rough blocks, often of considerable dimensions, rubble, spalls and earth. The pressure of this mass of hearting and the purchase which it gave to tree roots

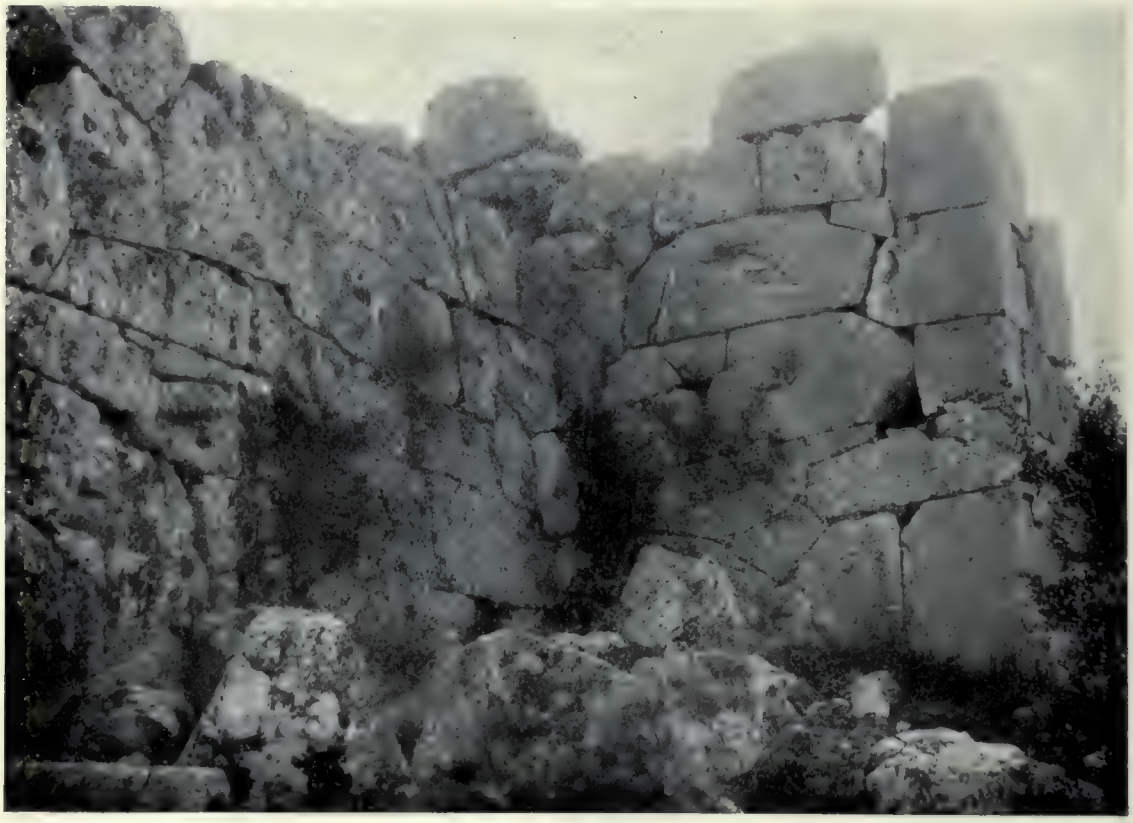

Fig. 24. – Tower 1.

has reduced the towers to a relatively more ruinous condition than the curtains (Fig. 26).

Towers 9 and 10 preserve slight but significant traces of superstructure above wall-walk level. The polygonal base of Tower 9 at its southeast angle supports a corner of coursed rubblework of large, roughly squared blocks laid in hard lime mortar (Fig. 27). The segments of wall which meet to form the corner are each 0.61 m. thick and stand some 0.80 m. above the polygonal base. Tower 10 above the polygonal masonry of its northeast face shows traces

of the mortar bedding for a similar wall of identical thickness. Here also the mortar bedding for the sill of the doorway from Curtain 9-10 remains in place, 1.53 m. long and 0.45 m. wide. Likewise in place in both towers are segments of the flooring of tiling cut in cubes, 0.03-0.05 m. square and 0.02-0.03 m. thick, set in a bed of lime mortar and crushed terracotta laid on the fill of the tower base (Fig. 28). Beside the southeast inner corner of Tower 9 lie three identical voussoirs of limestone, each 0.43 m. high, 0.59 m. deep, 0.195 m. wide at the bottom and 0.34 m. wide at the top. Top and bottom are cut to the curve of extrados and intrados. Joint beds and top bear traces of lime mortar or grout. They belong to an arch about 1.10 m. in span composed of nine such voussoirs, which must have been that spanning the doorway between wall-walk

Fig. 25. – Tower 16.

Fig. 26. – Tower 18.

and tower. A similar voussoir, probably from Tower 10, lies at the foot of the wall midway between Tower 10 and the Arx Postern. Five more have been extracted from the mediaeval north-west front of the Arx Wall, where they were reused along with other ancient material. Two more such voussoirs were found in the excavation of the Arx Postern (Fig. 29) and still another at the foot of the northeast front of the Arx Wall – all no doubt from the wreckage of Towers 10, 13, 14 and 15. These remains suffice to indicate that the towers, above their solid polygonal bases, had chambers of coursed rubblework, entered by arched doorways from the wall-walks of the adjacent curtains and probably pierced for embrasures. These chambers will in turn have supported fighting tops shielded by battlements of the same construction. Since, among the fallen blocks and rubble at the foot of the walls, no elements of solid cut stone merlons have been identified, we may probably assume that the battlements of the curtains were also of coursed rubblework.

Fig. 27. – Tower 9, Superstructure.

Tower 20 is at present a circular shell of rubblework lying athwart the wall, 6.78 m. in outer diameter with walls 1.16 m. thick. It is the counterpart of Tower 19 in the defences of the NE

Fig. 28. – Tower 10, Flooring.

Gate and its approaches, and almost certainly replaces an original square tower. The visible abutting blocks on either side do not furnish unequivocal evidence on this point, and only excavations can show whether the foundations of a square tower remain as footings. The random rubblework of the circular shell is similar to that of the repairs of the northeast salient.

The remains of the four interior buttresses show that they were built on the model of the inward projections of the towers. All were of finished polygonal masonry and projected from 1.15 m. to 1.40 m. from the inner face of the curtain. Buttress 11, the best preserved, is 6.80 m. in length. Buttresses 21 and 22 are each incomplete at one end but each over six meters long. Buttress 12, which fills an angle, has the exceptional length of 7.40 m.

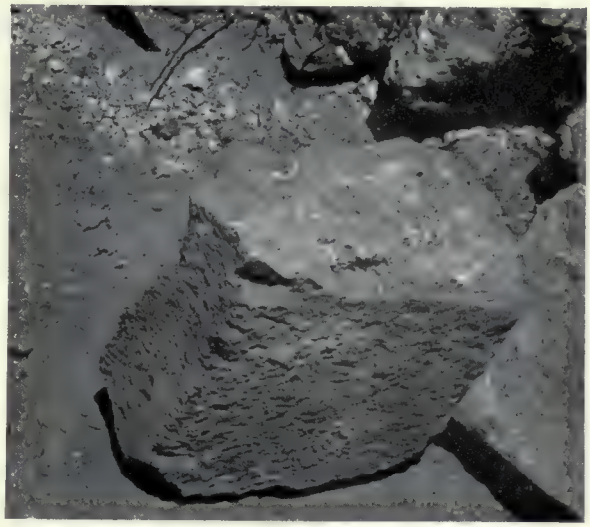

Fig. 29. – Voussoir of Tower Doorway.

The three town gateways are of uniform tactical conception and general plan, though they differ in detail (Fig. 30). All three are of the interior court or "propylon" type, consisting in a gatehouse which projects inward from the line of the wall.[61] Each gatehouse was made up of an outer gate closed by a portcullis, an inner gate closed by doors and a court between. The gateways are of one build with the curtains and of identical construction. Their walls, somewhat thicker than the normal curtain, are built up in two faces with a packing between. The faces visible from within the gatehouse are highly finished polygonal masonry and batter as the towers. The backs of the same walls are of roughly fitted, unworked blocks. The external corners display blocks of trapezoidal forms and horizontal beds, the internal corners absence of regular bonding.

The NE Gate is the best preserved of the three (Figs. 31, 32). The northwest pier of its outer gate still stands 6.43 m. high above present ground level, the side walls four to six meters. The outer opening is of 3.58 m., the inner court of almost twice that width and 8.39 m. long. The reveals of the outer gate are 2.38 m. and 2.25 m. deep, roughly equivalent to the thickness

[61] G. Saeflund, *Le mura di Roma repubblicana* ("Acta Instituti Romani Regni Sueciae", 1, Lund 1932) 97 f., 258 f.

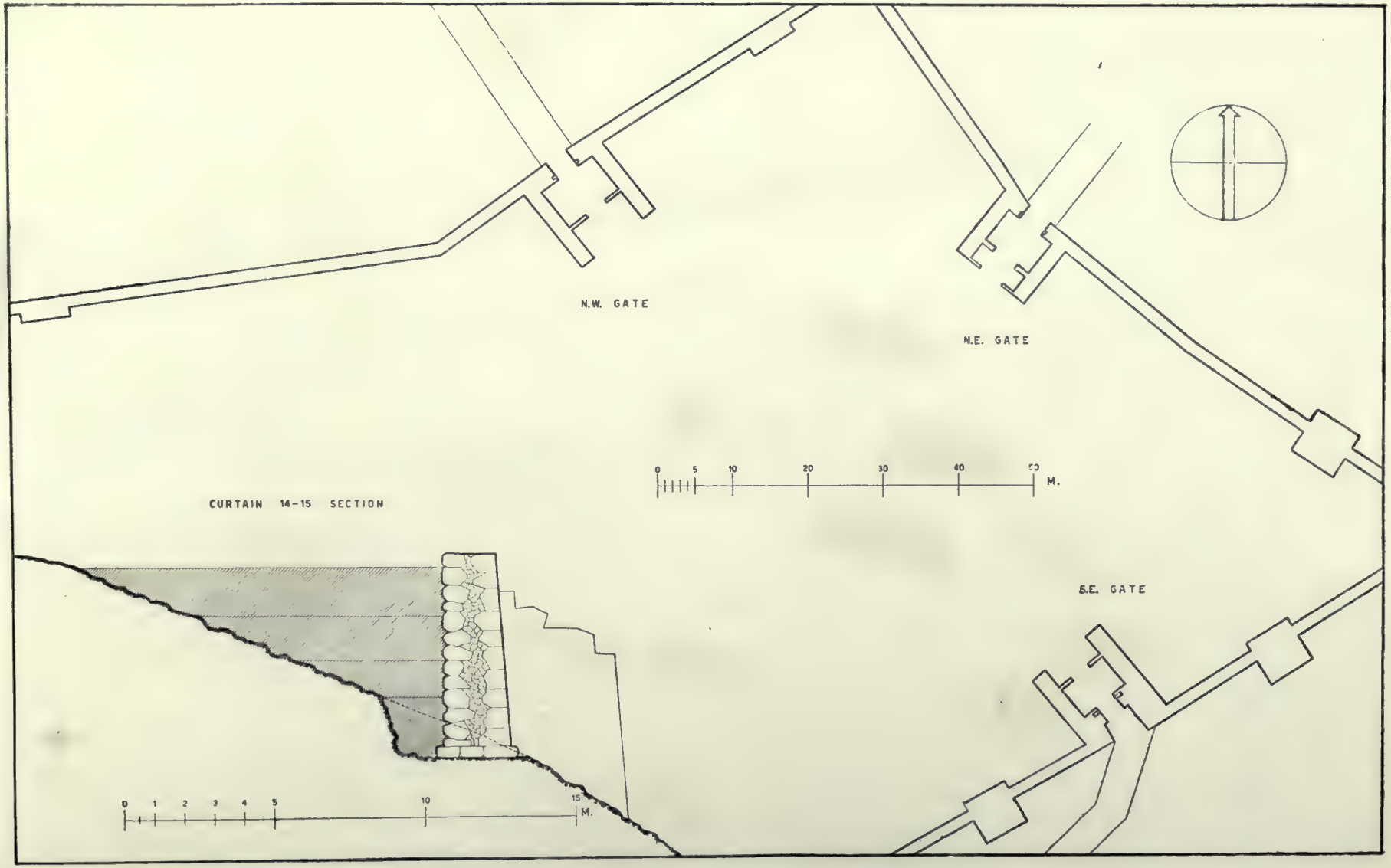

Fig. 30. – Gate Plans and Section of Curtain.

Fig. 31. – NE Gate, Exterior.

Fig. 32. – NE Gate, Interior.

of the side walls. These measure 2.24-2.30 m. up to a height of some five meters above present interior ground level. At this point the northwest wall has a setback on the exterior of some 0.40 m. to normal curtain thickness. The inner cross wall, 4.62 m. from the outer gate, is 0.86 m. thick. Of it remain only a few blocks bonded into the base of either side wall together with irregular gaps for bonding in the polygonal masonry above. The rest of the wall was probably of coursed rubblework, such as may be seen in the NW Gate (p. 47 and Fig. 37). The NE Gate alone gives evidence of a third cross wall, flush with the inner ends of the side walls and 0.60 m. thick: a projecting bonding block on the southeast side and remains of rubblework on the other.

Fig. 33. – NE Gate, Portcullis Fitting and Springer Block.

At 0.59 m. (II′) forward of the inner arriss of the outer gate occur the slots for the portcullis (Fig. 33). They measure 0.14 m. broad and deep, and that on the northwest side remains to its full height of 4.74 m. above present ground level. At this point there is a setback of 0.28 m., above which the preserved face rises another 1.63 m. Just behind the portcullis slot and 0.36 m. below the setback is cut the socket for a beam 0.30 m. (I′) square, which must have served to secure the portcullis when raised. The top of the portcullis when up would presumably have reached the wall-walk, well over 8.00 m. above present ground level. There the requisite winches and pulleys would have been installed, protected by the battlements or by a further elevated housing or barbican. The portcullis ran behind an arch, which spanned the outer opening and supported the housing above. Of it a single voussoir remains in place, the inner springer block on the northwest side, on its impost 2.29 m. above present ground level. The block is 0.79 m. wide at the bottom and 0.885 m. long. Its upper joint bed, 0.71 m. wide, is radiate to the center of the span, and its face, 0.415 m.

high, is cut to the curve of the intrados. The arches' original thickness of 1.48 m. (V') was made up by a missing outer springer block, 0.59 m. long. Thirteen such double voussoirs would have completed the span of 3.58 m. The crown of the intrados, 1.79 m. above the springing, was flush with the bottom of the lock-beam of the portcullis, the crown of the extrados, its voussoirs here flattened to a width of 0.66 m., with the setback at the top of the portcullis slot.

The SE Gate was the most strongly fortified. Its outer gate is set back behind the line of the curtains on either side, so that it opens from

Fig. 34. – SE Gate, Terrace Wall.

a splayed recess flanked by bastions, of which the northeastern considerably overlaps the southwestern. Its approaches were further covered and enfiladed by Towers 17 and 18, only 15.36 m. and 16.96 m. distant on either side. Before the gate a level terrace extending some 38.50 m. from the foot of the wall on a length of about 48 meters was supported by retaining walls of polygonal masonry, somewhat lighter and less carefully finished than that of the walls themselves (Fig. 34). Outwork or extramural market-yard, it flanked from the right the road ascending from the Port.

The interior dimensions of the gateway are generally somewhat smaller than those of the NE Gate. Its outer gate is narrower, 3.09 m., though deeper, 2.72 m., while the portcullis itself was wider and ran much more deeply in the reveals. The slot which survives in the northeast reveal is fully 0.79 m. deep. The answering slot is missing from the badly damaged southeast reveal, but a vestige

Fig. 35. – SE Gate, Interior.

remains, 0.135 m. deep, in a fallen block broken on all faces. Similarly the inner court here measured 6.92 m. by 8.22 m. overall (Fig. 35), but with side

Fig. 36. – NW Gate, Exterior.

walls 2.60 m.–2.38 m. thick at the base. The inner cross wall, 0.69 m. thick, was set 4.56 m. back of the outer gate. It consists, as in the NE Gate, merely of the stumps of foundations and the gaps for bonding in the polygonal side walls above. The rest will here too have been of coursed rubblework.

Fig. 37. – NW Gate, Inner Cross Wall.

The NW Gate is at once the largest and most ruinous of the three (Fig. 36), but alone has preserved significant remains of its inner cross wall and gate. The inner court was 8.10 m. wide and some 10.70–11.20 m. long, while its cross wall lay 5.30–5.80 m. from its outer end. Enough of the wall still stands to show that above its foundations of close-jointed trapezoidal masonry it was of coursed rubblework, 0.70 m. thick (Fig. 37). The roughly squared limestone blocks laid in hard lime mortar are closely similar to the work of Tower 10. Amid the fallen rubble at the foot of the northeast segment of the wall lay a limestone doorsocket (Fig. 38), a rough truncated cone, 0.22 m. high, with a shallow circular depression, 0.26 m. in diameter and 0.065 m. deep, in the wider end. The bottom half of this cup bore a grey metallic stain, perhaps trace of the leading of an iron or bronze shoe. Of the outer gate only the outer arriss of the southwest reveal is visible. The opening, however, may be restored as of approximately the same width as that of the SE Gate, 3.10 m.

Fig. 38. – NW Gate, Hinge Socket.

The Arx Postern repeats the "propylon" type in its simplest form.

It consists in a court or passage projecting inward from the curtain for 4.73 m. on a width of 2.66–3.20 m. and spanned by an arch at its outer end. Situated as it is at the westernmost angle of the Arx, the Arx Wall itself forms the north side of the passage (Fig. 56). The south side wall of finished polygonal masonry is 1.48 m. or V feet thick, and on the exterior over-

Fig. 39 – Arx Postern, Interior.

laps the north by 0.67 m. Partial excavation of the outer opening revealed blocks of the original sill in place at either side, laid directly on bedrock. The arch sprang two meters above them (Fig. 39). Both impost cuttings, 1.485 m. (V′) long and 0.59 m. (II′) deep have survived (Figs. 40, 41). In the north cutting the inner springer block is still in place, 0.88 m. (III′) long, 0.59 m. (II′) deep and 0.46 m. high at the back. Its upper joint bed is radiate to the center of the span, and its face is cut to the curve of the intrados. The arch itself, on a span of 2.66 m. (IX′), will have had a thickness of V feet

made up of two sets of voussoirs, respectively II and III feet long. No trace of doors or other means of closing came to light.

Fig. 40. – Arx Postern, Arch Springer.

The consecrated limit of the Arx (Fig. 56) was a line some 198 meters long meeting the Town Wall at either end and enclosing the southern height. It was for part of its trace embodied in a wall, pierced by a gateway on the line of Street P, the approach from the Forum. This Arx Wall was not a continuous fortification. Although discussed here for convenience as a part of Cosa's defences, it was in no military sense defensible. Rather it had the symbolic or ritual value of a precinct wall, the aesthetic value of an imposing socle and the practical value of a breast or retaining wall and formal barrier.

The sides of the rocky summit, which became the Arx, fell gradually away northeastward, but on the northwest dropped abruptly in cliffs five to six meters high (Fig. 10). Here no additional barrier was required. The sacred boundary was sharply defined by nature, the cliffs practically unscaleable by ordinary trespassers. Elsewhere a wall was wanted, and it was erected in four distinct segments or curtains. One, at the western end of the northwest front where the boundary of the Arx descended the cliff to include the postern gate, ran for 22 meters from the cliffside to the Town Wall (Fig. 42). Two more marched across the easy slope of the northeast front in equal, straight and parallel curtains on either side the

Fig. 41. – Arx Postern, Impost Cutting.

gateway. The fourth, at the southeast end of the northeast front where again the hillside fell steeply away, crossed the low ground in prolongation of the northeast side of Tower 14 to meet its neighboring segment with a curious jog and break in construction. North of the gateway the Wall was a breast and retaining wall revetting the higher shoulder of the Arx. South of the gateway it was a free-standing barrier.

The visible portions of the Arx Wall are identical in form and build with the curtains of the Town Wall (Fig. 43), save that they are finished inside as well as out. The southeast leg of the northeast front has at the top the same

Fig. 42. – Arx Wall, West Segment.

thickness of 1.80 m. as the curtains of the Town Wall, while the other three segments apparently had the thickness of the gate walls, 2.20–2.30 m. The original full height of the Wall, since its top is nowhere extant, is difficult to conjecture. The highest existing block, just north of the gateway, reaches a calculable height of 3.28 m. above the original outside ground level. Probably the Wall was nowhere much more. The gateway itself, an unbarred monumental entrance, was merely a gap of some 8.30 m. (XXVIII') between the ends of the two curtains. It can scacely have been spanned and shows no trace of gates or portcullis. Its northwest side was formed by a return of the Wall (Fig. 44), which for 18.45 m. revetted the edge of the higher north angle of the Arx. Its southeast reveal is no longer in place, but was apparently merely the finished end of the curtain.

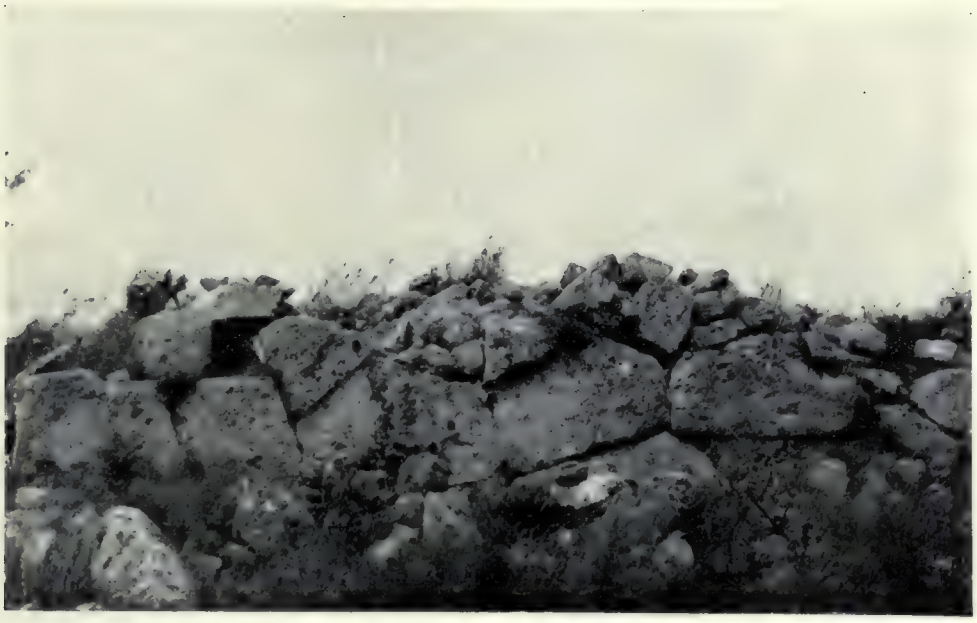

Fig. 43. – Arx Wall, Northeast Segment.

That the Arx Wall was contemporary and of one build with the Town Wall is plain from the northeast face of Tower 14, where tower and wall construction are clearly of a piece without break of any kind. Some insight into the process of construction of both Arx and Town Walls and some evidence of their date was gained from the trenches sunk at the angles of junction.

Trench I, 4.40 m. long, 1.60 m. wide at the top and 1.20 m. wide at the bottom, was carried along the inner face of Tower 14 from the inner face of the Arx Wall (Fig. 45).[62] Bedrock was reached 3.32 m. below present ground level. For the

Fig. 44. – Arx Gateway, Northwest Side.

[62] In Fig. 45 the attempt has been made to show both the material sectioned by the trench and the elevation visible at the end of the trench. Where these are not the same, the sectioned material is indicated by hatching and by the legends at the side.

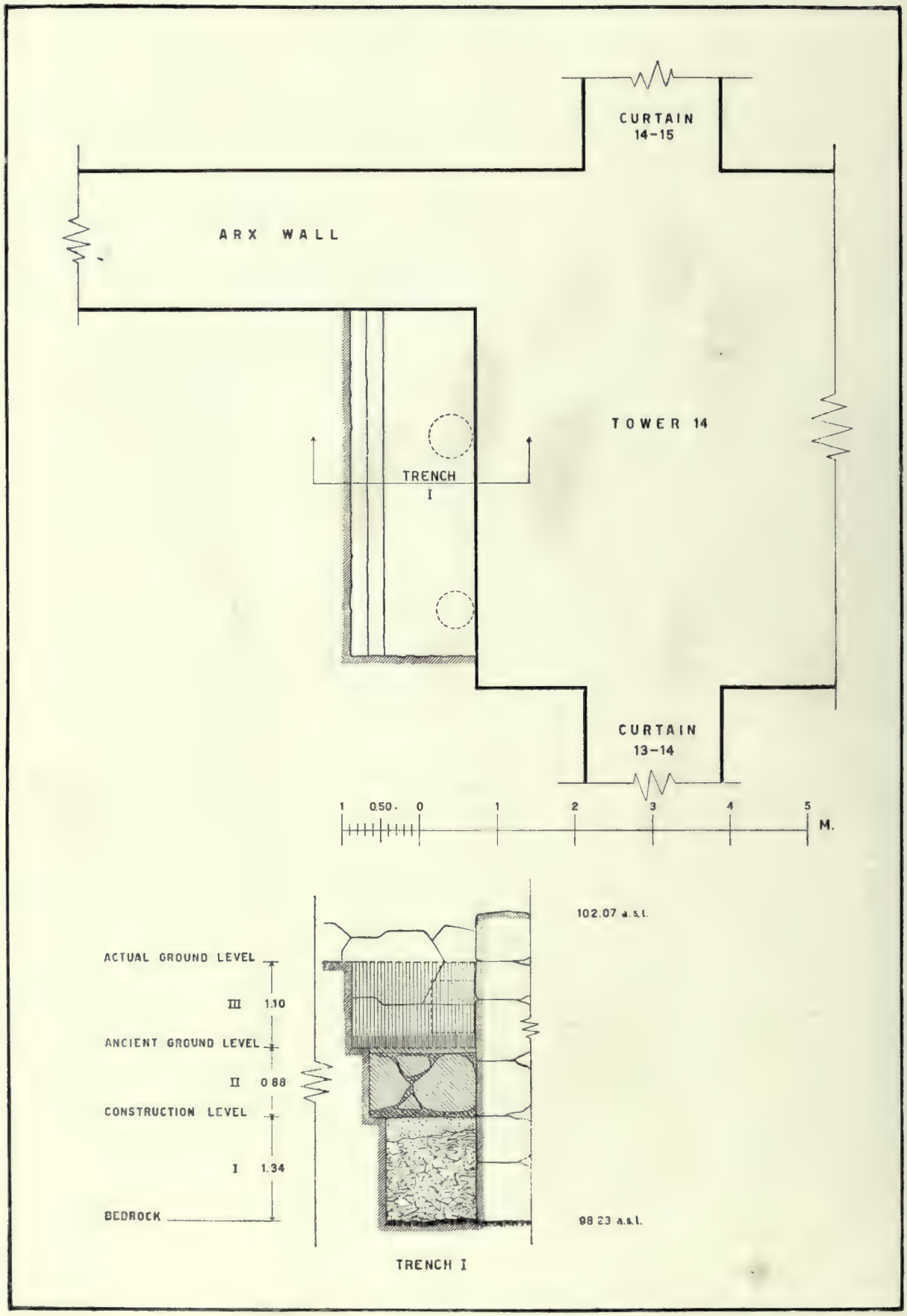

Fig. 45. – Trench I.

first 1.34 m. above bedrock (Level I) Trench I cut through the fill of the ancient trench dug by the builders of Tower 14 in the natural soil and loose rock of the hillside in order to dress the bedding and lay the lowest courses of the tower. This construction trench had then been filled with spalls from the dressing of the lowest tower blocks and given a level working surface of hard-packed ochre subsoil. The filling and its surfacing contained no artifacts. Both continued beyond the end of Trench I beneath the rough foundation blocks of the inner face of the Arx Wall. The latter were laid upon the surfacing without bond with the tower in a bed of the peppery local sea sand mixed with fine gravel and spalls (Fig. 46). Against them for the next 0.88 m. (Level II), as against the face of the tower, was found packed a firm fill of ochre subsoil and spalls, made evidently during the construction to attain the desired final ground level. This level itself was a hard rammed surface. Above it the polygonal blocks of the Arx Wall were tightly jointed and dressed smooth with a point. The 0.88 m. of fill beneath contained, besides sherds of coarser wares, black-glaze "Etrusco-Campanian" sherds of three fabrics, which may be dated approximately to the first half of the third century B.C.

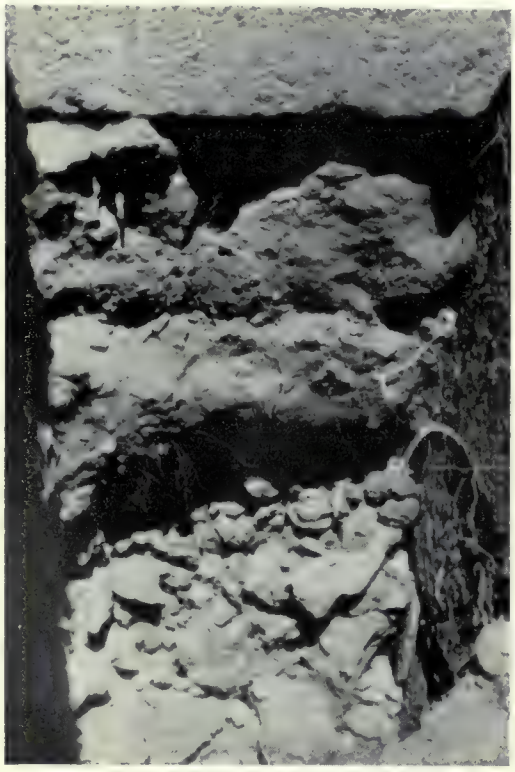

Fig. 46. – Trench I, Northeast End, Levels I and II.

Into the rammed surface of the original ancient ground level were found sunk the bottoms of two pointed amphorae. Above it for 1.10 m. (Level III) Trench I sectioned the deposit accumulated from the time of the building of the tower and Arx Wall to the present. The lowest 0.15–0.18 m. of this deposit was of earth well trodden down and full of potsherds, testimony to continuous frequentation and gradual accumulation of debris. This stratum produced no sherds of fine wares other than black-glaze of various fabrics, mostly later in appearance than those of Level II. Just above it, against the face of the tower stood two small "travertine" column drums (dotted in plan), unfluted and of different diameter, as though placed as seats or supports for a bench

(Fig. 47). The remaining deposit was of looser earth interspersed with broken tile and stones, material evidently washed or tumbled down from the slopes above.

The evidence of Trench I, then, is that, although Tower 14 and the adjacent section of the Arx Wall were erected simultaneously, the lowest courses of the tower, probably up to the projected ground level, were laid first, since it was not thought necessary that the Arx Wall be founded on the rock. It is further indicated that the construction of both took place during the third century B. C. This approximate date is confirmed by the results of careful soundings made to the depth of about one meter within the hearting of Tower 14 and of its angle of junction with the Arx Wall. These soundings produced in small amount sherds of the same black-glaze fabrics as appeared in Level II of the trench.

Fig. 47. – Trench I, Level III, Column Drums.

Trench II, 4.70–4.00 m. long, 2.00 m. wide at the top and 1.60 m. wide at the bottom, was carried along the inner face of Curtain 10-AP from the outer face of the Arx Wall (Fig. 48). Bedrock was reached 2.63 m. below present ground level. In its first 1.13 m. above bedrock (Level I) Trench II sectioned an ancient construction trench in all respects similar to Level I of Trench I. Here, however, the filling of spalls was shallower and the hard-packed working surface of ochre subsoil correspondingly thicker. At the end of the trench only the layer of spalls continued beneath the foundations of the Arx Wall. These consisted of a rough heaping of boulders across the fill of spalls, followed by a deep pitching of limestone rubble, at the top of which a row of larger stones was laid to form a more or less level bed (Fig. 49). Level II of the trench reached this height in 1.15 m. Like Level II of Trench I it consisted in a packed homogeneous fill of ochre subsoil and spalls with a hard rammed surface at ancient ground level. Close against the Arx Wall foundations the fill appeared loose and disturbed, containing many fragments of tile. Above the rammed surface the Arx Wall was again of tight-jointed, smoothly dressed polygonal

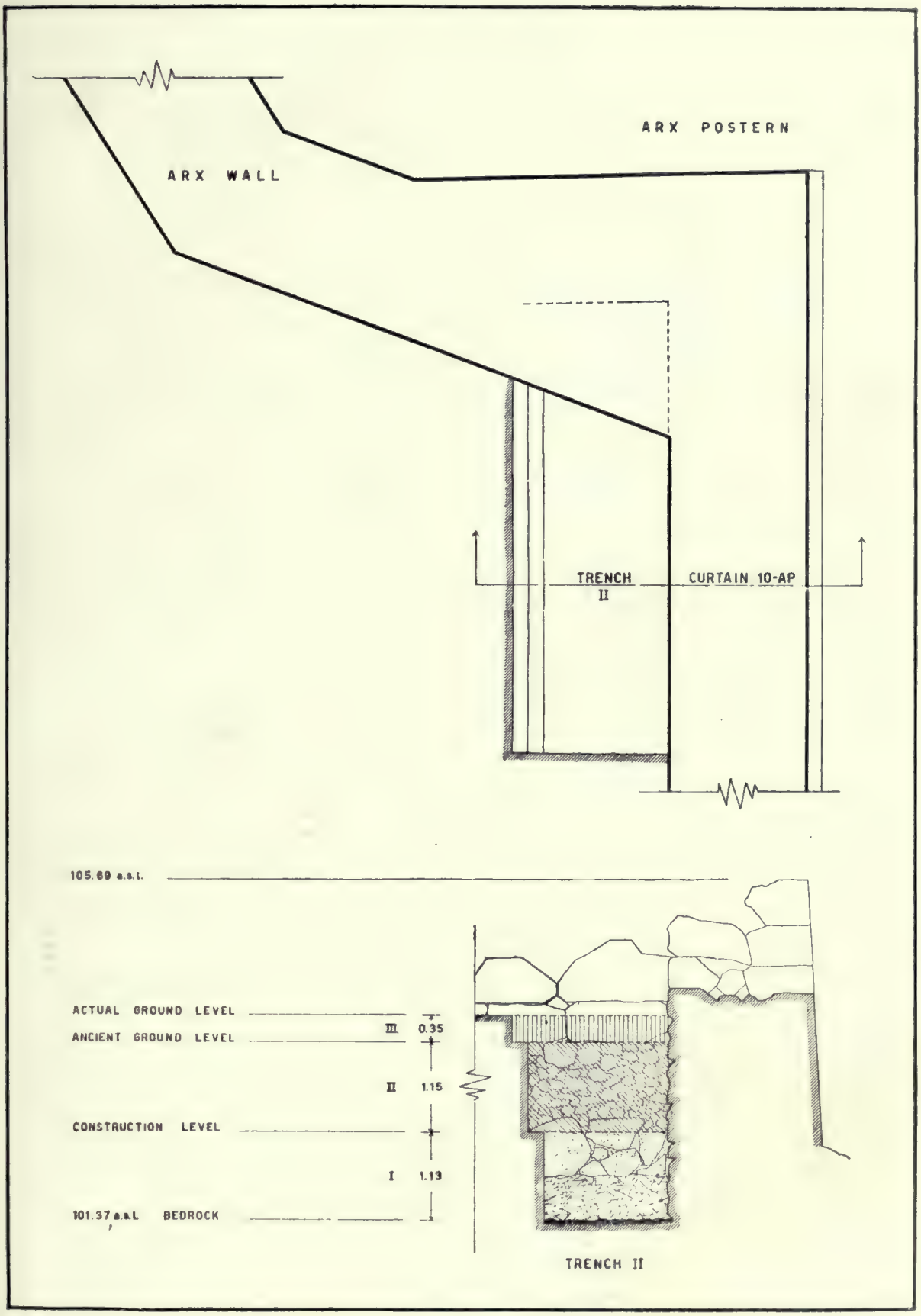

Fig. 48. – Trench II.

masonry. The accumulated deposit above (Level III) was thin, 0.35 m., and had been reduced to loamy topsoil by vegetation. Throughout the entire trench only a scattering of sherds of undateable coarse wares was found.

From the evidence of Trench II it would appear that Curtain 10-AP had been erected to its full height, the filling behind it laid down and brought to the desired final surface before work was begun on this section of the Arx Wall. The footings of the latter give every indication of having been laid from above in a deep trench cut through the fill of Level II and the surface layer of Level I.

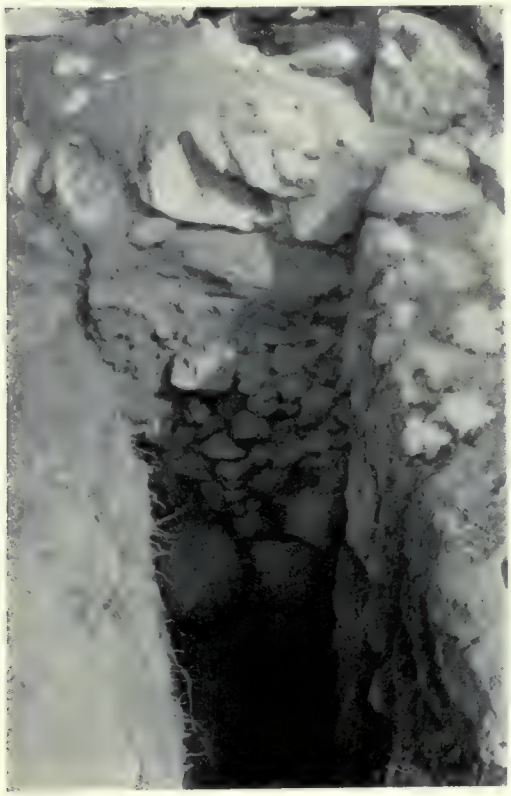

Fig. 49. – Trench II, Southeast End.

Complementary evidence was found in an examination of the stonework of the southwest end of the Arx Wall and of the northwest side of the Arx Postern. The latter for a length of some 5.10 m. from the arriss of the opening is of one build with the outer face of the adjacent curtain, and was clearly erected in the normal march of construction of the curtain. The inner face of the Arx Wall abuts this segment with a marked break in construction and after describing a curious re-entrant. The outer face of the Arx Wall, carried in a straight line, meets Curtain 10-AP at an obtuse angle, which produces at the juncture an apparent thickness of 3.90 m. This is shown by the condition of the stonework of the top of the wall to be an effect of the imperfect abutment of the Arx Wall on the pre-existing northwest side of the Arx Postern. The original outer face of the postern side wall, in fact, came to light imbedded in the masonry of the Arx Wall for a length of 1.80 m. (Fig. 50; dotted in plan). It was originally 1.76 m. (VI′) thick and had been left unfinished at its inner end to bond with the Arx Wall. Further soundings were made to a depth of over a meter within the hearting of the northwest side wall of the Arx Postern as well as within the section of the Arx Wall built against it. They yielded a small number of black-glaze "Etrusco-Campanian" sherds of two of the same fabrics found in Tower 14 and in Level II of Trench I.

The combined evidence of the investigations at either end of the Arx Wall taken together with the gross morphology of its four segments may be read, in sum, as follows. Construction of the Town Wall in this sector, curtains and towers alike, advanced from west to east. In the course of it the Arx Postern was erected with the inner end of its northwest side left unfinished in preparation for the eventual abutment of the Arx Wall. Construction of the Arx Wall itself, meanwhile, had probably already begun with the building of the two central, city-ward segments on either side the gateway. When construction of the Town Wall had reached Tower 14, and when the base of the tower up to the projected ground level had been completed, the footings of the southeast segment were laid, the area behind was filled and levelled up against them and against the tower, and the inner face of the wall was fitted and dressed to this level. From this point work on the Town Wall presumeably proceeded northeastward, work on the southeast segment of the Arx Wall northwestward. As the southeast segment approached the already finished segment south of the gateway, it became apparent that, through a surveyor's error of some half a meter, the two walls would fail to abut. The result was the curious jog in the last 1.50 m. of the southeast segment. When eventually the southwest segment was taken in hand and approached the north-west side of the Arx Postern, it was found impractical to make the direct abutment that had been envisaged. The solution was to introduce a flat angle at the juncture and to carry the Arx Wall well beyond the postern wall. This change in plan required trenching the fill previously packed against the outer face of the side of the postern, in order to lay footings to support the widened juncture of Arx and Town Walls. Here too the Arx Wall was tight-jointed and smooth dressed only above ground. This continuous process of construction took place in the middle decades of the third century B.C.

Fig. 50. – Arx Postern, Original Northwest Face.

The Arx Wall bears no evidence of ancient repair or remodelling. It evidently stood as originally built all through antiquity and gradually fell into ruin as the site lay abandoned. Only in the high middle ages were its remains turned to the uses of the builders of a crude rubblework bailey wall. This wall, thrown together almost entirely from the debris of the ruined ancient structures on and about the Arx, followed the trace of the old consecrated boundary. It was founded wherever possible on the remains of the Arx Wall, and joined the north end of the old northeast front to the southwest segment with a new wall along the cliffs of the northwest front. It was pierced by two gates, one in the narrowed gap of the old Arx Gateway (Fig. 44) and one in the center of the northwest front, where an approach ramp was heaped up from fallen debris. The Arx Postern appears to have been roughly blocked up with ancient material. Rectangular towers were raised against the north angle of the wall and on either side the new gate, while at the north end of the northwest front and midway between the northeast gate and Tower 14 fortalices, greatly thickened lengths of curtain crowned with parapetted battlements (Fig. 51), were erected.

Fig. 51. – Arx Wall, Southeast Segment.

BUILDINGS

Within its walls, within the mesh of its streets, the site of Cosa is strewn with the remains of its ancient buildings (Pl. III). Now they have withstood time and weather well enough to tell us plainly what buildings they once were. Again they are mere disjointed lengths of walling, whose pattern and identity can only be divined. Yet again they are an indecipherable litter of rubble, tile and potsherds. Certain buildings and groups of buildings are readily singled out: the Arx with its temples; two other greater temples, A by the NW Gate and the buried temple on the Eastern Height; the Forum and its buildings; the Baths near the center of the town; the structures serving water supply, and finally the mass of dwelling places. These all taken together give us the general

pattern of use and distribution of space. The town was built up to the walls. Little or no unused ground was to be found within them. About the periphery, widely separated, were planted the three chief temples. The main public buildings were massed in the southeastern quarter on and about the Forum. Dwellings occupied the rest.

Materials and Construction

All these ruined structures display a striking uniformity of materials, of building methods and of style. The ordinary building material is the grey limestone of the hill itself, whether in the form of construction stone of all sorts or reduced to lime. With it goes the peppery-looking sand of the nearby dunes and beaches. These materials have no rivals. All others are exceptional. A hard calcareous sandstone, grey and pitted, is used for the walls and an arch of the three-cella temple on the Arx, for the retaining wall of the forecourt of Temple B on the Forum, for tombs and in a few cistern vaults (Figs. 60, 76, 87, 102, 104, 106). It occurs only in the form of flat bricklike slabs, and on the Arx and in Temple B is associated with an exceptional rock-like white mortar of pure lime mixed with very fine gravel and a little crushed tile. In the buildings on the Arx various other stones are sparingly used for special purposes: a soft yellow sandstone, grey nenfro, the light purplish tufa of Vulci and a yellowish " travertine ".

The chief artificial material is roofing tile. Broken, it is freely used as rubble. Sawn into cubes, it makes a flooring.[63] Crushed, it forms the aggregate of signinum pavings and linings and of the rough undercoats of stucco. Paving tile, molded in the form of small lozenges and rectangles for diaper and herringbone pavings, is found here and there over the whole site. Building brick occurs only in the shape of heavy, roughly shaped bricks of deep red color and of crude brick format, 0.08–0.11 m. thick. These have been found in the excavations on the Arx and collected from widely separated points within the town.

The native limestone, for the podia of Temples D on the Arx and A, B and C in the town and for the revetment of the reservoirs in Squares III–D, V–A and VII–E, was cut in massive polygonal and trapezoidal blocks of similar average dimensions to those of the fortifications, laid dry and finished with the point in exactly the same manner (Figs. 61–64, 74, 75, 82–84). Similar dry polygonal and trapezoidal masonry, though of somewhat smaller average dimensions (0.56 m^2. or six square feet), was, in the podium of the three-cella temple on the Arx, used with a backing of rubblework (Figs. 57, 59).

[63] *Supra* 39; Fig. 28.

Elsewhere construction in mortared masonry and rubblework is the rule. The mortar, save for the exception noted above (p. 59), is a mixture of lime and sea sand and takes a characteristic peppery look from the color of the sand. Often larger or smaller amounts of finely crushed tile were added to the mix.[64] It is lighter or darker in color according to the proportion of sand, harder or softer according to the mix and the purity of the ingredients. Finer or coarser nodules of unslaked or unscreened lime are usually present.

The superstructure of the towers of the Town Wall as well as the inner walls of the gates have been described as built of coursed rubblework.[65] This sort of work is also found in the cella walls of Temple D on the Arx (Figs. 58, 61, 62), of Temple B on the Forum and in the cella walls and antae of the Port Temple. Temple D furnishes the best example. The lowest course and the quoins are built of well-dressed trapezoidal blocks of large dimensions. The less finished blocks of the courses of rubblework above and between diminish in size toward the top. It is perhaps only the greater care expended on the choice of materials and workmanship which differentiates this masonry, used in fortifications and sacred buildings, from that current in the rest of the town as described in what follows.

Foundations, where visible (e. g. in the Basilica on the Forum, in a building on Street 5 in Square VII-E, in a house on Street M in Square VI-D), are usually of mortared masonry (Fig. 52). The limestone blocks are roughly trimmed to trapezoidal, or more rarely polygonal, forms and laid in beds of mortar in broken and irregular courses. Gaps and unevenesses are filled with smaller stones, bits of tile and coarse sherds. The blocks show no uniformity of size or shape. The average surface area of the blocks in the three buildings cited above may be measured as some 0.15 m². or about 1 3/5 square feet.

Above the foundations the lower part of the wall, often treated as a socle marked by a setback, is generally of coursed rubblework. Roughly squared limestone blocks are laid in uneven courses with wide mortar joints. Here too smaller stones, broken tile and thick sherds are used as fillers, and an occasional levelling course of tile is to be seen (Fig. 53). In coursed rubblework the blocks naturally manifest some uniformity of size and shape. In five buildings where they could be measured they approximate, within wide limits of variation, broad rectangles of 0.30 m. and 0.24 m. average length and breadth, about 0.07 m². or 3/4 square foot.

[64] Cf. Vitr. *De Arch.* 2. 5. 1.
[65] *Supra* 38, 44, 47; Fig. 37.

Fig. 52. – Basilica, Northeast Wall.

The walls above are invariably of random rubblework of smaller unshaped stones with sporadic tile and sherd snecking (Figs. 54, 55). They are usually graded in size so as to diminish slightly toward the top of the wall, though the maximum dimension rarely falls below 0.20 m. This diminution is more marked in walls without a coursed rubblework base (Fig. 71). In both types of rubble-

Fig. 53. – Building in Square VII-E.

Fig. 54. – Building in Square VII-D.

Fig. 55. – House in Square IV-E.

work the rubble was laid by hand across the wall as it rose. There is no appreciable difference between the work of the faces and of the core. Masonry and rubblework alike were in all cases intended to be covered with stucco, and to many walls patches of the rough rendering coats still adhere (Figs. 68, 77).

Ordinary walls of rubblework were built to standard dimensions. They were regularly 0.58-0.60 m. (ideally 0.592 m. or II′) or 0.43-0.46 m. (ideally 0.444 m. or IS′) thick. In walls which have a socle and setback, the larger dimension is used for the socle, the smaller for the wall above, and the setback is ideally of 0.148 m. or S′. The setback may be either interior or exterior. In some buildings the larger dimension appears to be used for exterior, the smaller for interior walls. In others the main bearing walls seem to be of the thicker sort, partitions of the thinner.

The Arx (Fig. 56)

The Arx of Cosa was an area sacra, abode of those gods, *quorum maxime in tutela civitas.*[66] On its summit rose a lofty Capitolium, *excelsissimo loco unde moenium magna pars conspiciatur,*[67] dominating the town, a beacon for miles at sea. On its right and left stood smaller temples, and in the midst ascended the Via Sacra, prolongation within the sacred boundary of the approach from the Forum. Even before excavation the north and south walls of the Capitolium stood some 7.00 m. and 6.30 m. above ground, forming the ruin known locally as the "Palazzo della Regina". Now the Capitolium and the temple to the north of it, the Via Sacra and much of the area of the Arx have been excavated (Figs. 57, 58). They will be examined in detail in a separate study.

The Capitolium was of three cellae with a deep columnar pronaos preceded by a terraced forecourt, the whole oriented ENE and 46.20 m. × 23.10 m. overall. The temple proper was divided equally in length between the cellae and the pronaos, while of the cellae the central was wider than the lateral in the ratio of four to three. The pronaos was of six columns, four on the facade in line with the cella walls and two behind the middle facade columns in antis. Beneath the floor of the enclosed rearward portion of the pronaos was a vaulted cistern. Walls and columns carried a timber roof adorned on the outside with terracotta revetments. Approach from the forecourt was by a flight of steps continuous across the entire facade. The temple walls rose from a high podium, the heavy

[66] Vitr. *De Arch.* 1. 7. 1.
[67] Vitr. *loc. cit.*

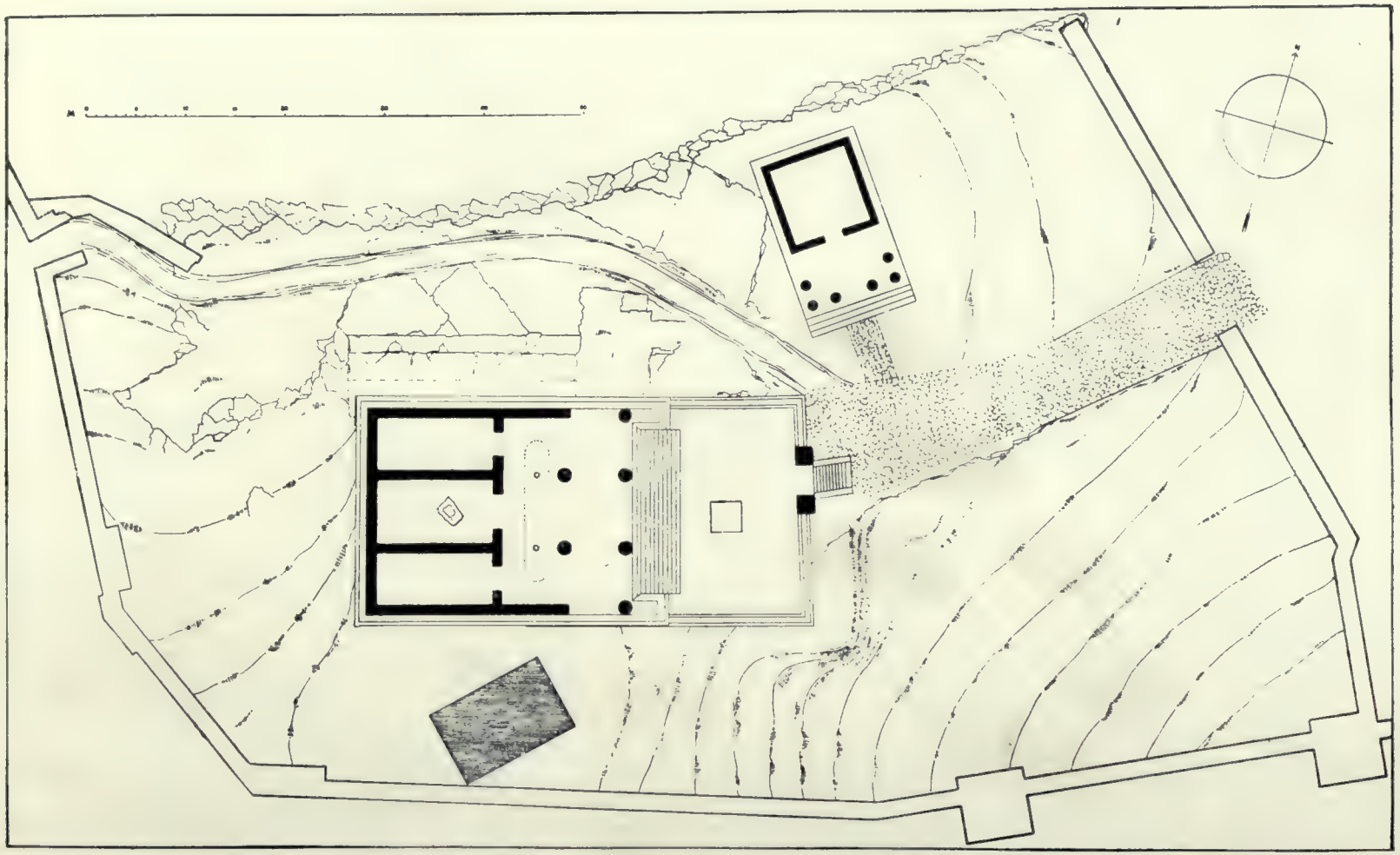

Fig. 56. - Arx, Plan, after ca. 50 B. C.

Fig. 57. – Arx, Via Sacra and Capitolium.

Fig. 58. – Arx, Temple D and Capitolium.

moldings of which were returned about the spurs which flanked the steps on either side (Figs. 59, 60). The forecourt in turn was accessible by a flight of

Fig. 59. – Capitolium, South Side.

steps on the axis of the Via Sacra and contained the square altar on the axis of the temple. It was enclosed by a screen wall footed on its polygonal retaining walls.

Opposite the north angle of the forecourt of the Capitolium, less than eight meters distant, stood a second temple, D, which faced SE by S (Figs. 61, 62). Its low polygonal podium, 17.00 m. × 11.00 m., backed on the cliffs above the

Fig. 60. – Capitolium, South Side, Podium Molding.

town and supported a single square cella. The deep pronaos before it was without interior supports, having four columns on the facade and one on either flank in line with the cella walls. Between it and the Via Sacra on an apron of polygonal paving stood the altar.

The third temple stood on the crest of the Arx close beside the south wall of the Capitolium. It remains unexcavated and, indeed, was even in antiquity

Fig. 61. – Temple D, Facade.

Fig. 62. – Temple D, West Side.

obliterated after destruction by fire. It is known only by traces of the ruin of its walls and by important fragments of its terracotta decoration, found beneath the ancient terracing which hid them.

The excavations have brought forth abundant evidence to show that the Arx reached its fullest architectural development, crowned by at least three temples and perhaps by other buildings yet undiscovered, only with the erection of the Capitolium early in the second century B. C. Before this, there was first, probably from the founding of the Roman colony, the little unexcavated temple, facing northeast over the town along the axis of the Via Sacra. Temple D was built later in the third century and later still the Capitolium. Then, about the middle of the first century B. C., the original temple burnt down, was not rebuilt, and the Capitolium and Temple D stood alone. The Capitolium, at least, was frequented and kept in repair down to about the middle of the third century of our era. Follows the blank record of a long period of abandonment, during which the Capitolium and Temple D fell into ruin, until, about the millennium, in the hulk of the Capitolium a church was ephemerally installed. Still later the once more deserted building was patched and clumsily remodelled to form the central hall of the thirteenth century castle of Ansedonia, whose fortifications capped the ruinous Arx Wall.

Temple A (Pl. III)

There remains of Temple A (Square IV–B) the impressive bulk of its podium retaining wall just within the NW Gate (Fig. 63) and ground traces of its cella walls or foundations. The terraced podium, oriented with the streets of the town, was roughly of the same size as the Capitolium with its forecourt, some 43.00 m. × 28.00 m., and still stands about five meters high at the northeast end. The temple itself probably faced southwest, and at this end of the podium there are traces of what may have been the foundations of a flight of steps in the line of continuation of Street 5. Access from Street K on the southeast was apparently provided by an opening, 2.20 m. wide, on this side. The polygonal masonry of the podium was closely similar to that of the Town Walls (Fig. 64). The walls above, possibly the northwest wall of the cella and a cross wall, were of heavy mortared masonry.

The Eastern Height (Pl. III)

The Eastern Height was set off and terraced up behind a retaining wall, which ran from leg to leg of the salient of the Town Wall for a length of more than 63 meters. This wall, in part of dry-laid trapezoidal, in part of mortared,

Fig. 63. – Temple A, Northeast End.

masonry, may be likened in small to the Arx Wall. Above it rises a mound of fallen rubble, from which no walls emerge, save at its northern foot those of the gallery of the Town Wall. [68] That the mound conceals the remains of a temple

Fig. 64. – Temple A, Southwest Side.

may be assumed both from its position and from its monumental approach. A broad processional way, Street R, of the same width as that within the Arx, mounts the slope from Forum level on the axis of the mound. A rock-cut and

[68] *Supra* 36 f.

terraced ramp at right angles brings it from the southeastern end of the Forum. It is flanked on the right by a semicircular foundation of ashlar, 16.25 m. in diameter, the base of an aedicula or monument, and on the left further along by a rectangular foundation, which must have carried another such edifice. The

Fig. 65. – Forum looking Southeast.

temple, which presumably stood on the axis of this approach looking southwestward across the town toward the Capitolium, cannot have been of great size.

The Forum (Pl. III)

The Forum stretches today long, level and open, its sides bordered by the remains of buildings, its ends closed by the ruins of a gateway and of the base of a monument on axis (Fig. 65). The open space is roughly 90 by 30 meters with its length NW-SE on the projected axis of Street 6. The buildings along its northeastern side are relatively well-preserved, and three, a basilica and two temples, readily identifiable (Fig. 66). The buildings along its southwestern side have been reduced to disconnected vestiges of walling, which yield no recog-

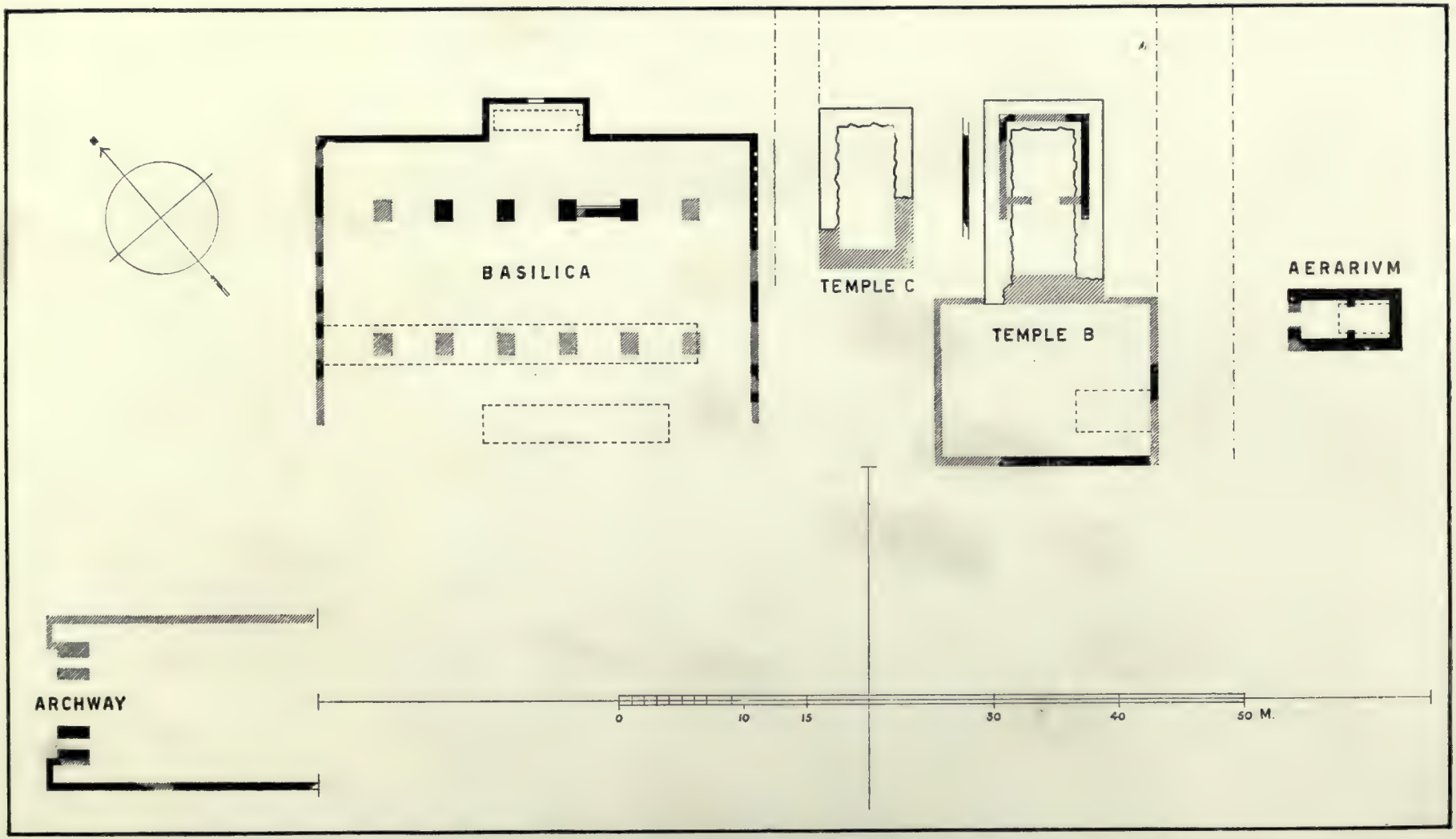

Fig. 66. – Forum, Plan of Buildings on Northeast Side.

nizable plans. Enough, nevertheless, remains to show at a glance the total absence of any consistent alignment of the facades on the open area. Similarly no vestige, whether of foundations or of fallen members, suggests that the central space was enclosed or flanked by uniform colonnades.

Gateway

The Forum was entered at its northwest end through a monumental arched gateway on the axis of Street 6 and on the line of the southeast side of Street D.

Fig. 67. – Forum Gateway, Northwest Facade.

A wide central and two narrow side openings gave on a vestibule, through which passed the gently sloping approach to the Forum proper. Of the triple archway there remain above ground the stumps of the southwestern pair of piers with a mass of rubblework canted sideways above them, containing the top of the southwest lateral archway and the attached portion of the central archway. On its side a few meters to the northeast lies the top of the northeast lateral archway (Fig. 67). The northeastern piers are still hidden beneath the earth. The gateway was 2.40 m. deep, its lateral archways 0.96 m. wide. Of the central arch, which sprang some 0.60 m. above the springing of the lateral arches, a measurable chord of 1.33 m. remains, enough to indicate a span of approximately 3.84 m., four times that of the side archways. The bare, unadorned facade, almost nine meters in length, pierced by three arches of these proportions, looks by comparison with Imperial triple arches ungainly on any restoration. It was,

moreover, flanked by slightly projecting wings, 2.60 m. wide, which returned at right angles to form, it would seem, the rear walls of colonnades on the lines of the outermost piers. The southwestern of these walls with a single breach stands for a length of 21.60 m., much of it over three meters above ground. The northeastern has disappeared. Both will originally have been some 25 me-

Fig. 68. – Forum Gateway, Southwest Archway, Northwest Facade.

ters long, terminating in a manner that must remain conjectural at the Forum level in line with the northwest wall of the Basilica.

The gateway, save for the facing and quoining of the piers and the arches, is built of coarse random rubblework. The piers are faced and quoined with mortared masonry of blocks averaging 0.22 m. high (Figs. 68, 69). The arches present on either face a ring of voussoirs, which faces off the rubblework vault, itself laid over a wooden centering. Each lateral arch was of eleven voussoirs, varying from 0.29-0.39 m. in length and from 0.12-0.14 m. in width on the intrados. The central arch above the springer was made up of alternately broad and narrow voussoirs, the latter laid as headers tailing into the rubblework vault. Their widths on the intrados are extremely variable, but all are

Fig. 69. – Forum Gateway, Southwest Archway, Southeast Facade.

about 0.50 m. high and roughly cut to the curve of the extrados. The southwestern wing and lateral wall are of coarse rubblework, which tends to fall into courses. The latter is pierced by three high, narrow openings.

The ruinous foundations at the opposite end of the Forum area do not of themselves yield the secret of their identity. Memorial or shrine, it faced the gateway broadside, rising from a rectangle of footings of mortared masonry some 10.00 m. × 6.50 m. Beyond either corner, southeast and southwest, further foundations for steps or seats may be made out.

Basilica

The ruin at the northwest end of the northeast side of the Forum, in which we may recognize a basilica, is that of a large rectangular building facing southwest broadside to the Forum area. On its short axis a shallow tribunal projected from the rear wall. Parallel to its northeast wall are the remains of four of a row of six piers. The northeast end of the southeast wall still stands some five meters high and the rear wall of the tribunal about 5.30 m. (Figs. 70, 71).

Fig. 70. – Basilica, Southeast Wall.

Fig. 71. – Basilica, Tribune, Exterior.

The southeasternmost remaining pier still rises 3.40 m. above ground. The line of the southwest wall and the nature and location of its openings on the Forum cannot be precisely determined. Beneath this portion of the building ran two stone-vaulted cisterns, one almost thirty meters in length. Directly above it a long heap of rubble seems to mark the position of a second row of piers. A fragmentary tongue of rubblework, projecting 0.16 m. at ground level from the face of the northwest wall four to five meters from the north corner, is perhaps the vestige of a sill bedding and evidence of an opening or openings at this end of the building.

Fig. 72. – Basilica, Tribune, Southeast Side.

The length of the Basilica on the outside may be measured as 35.52 m. or CXX feet. Above the foundations the walls of random rubblework are 0.53 m. thick and set back 0.06-0.07 m. on the exterior. The tribunal projected 2.96 m. (X′) on an overall length of 8.58 m. (XXIX′). Its walls above floor level were only 0.44 m. (IS′) thick, but apparently of one build with those of the basilica proper, for the inner end of the southeast wall overrides the foundations of the northeast wall of the Basilica (Fig. 72). The rear wall of the tribunal was pierced in the center by a high window-opening, possibly arch-headed. Below floor level it contained a narrow vaulted cellar, entered at its southeast end by an archway of nine voussoirs. On the exterior at the northeast end of the southeast wall of the Basilica there remain, close beneath the setback, six of a row of beam sockets. Spaced at intervals of 0.89 m. (III′) and themselves I′ square and about 0.40 m. deep, they presumably took the brackets supporting the flooring of a corbelled gallery along this end of the building. Its width is perhaps indicated by the remains of a stone curbing 1.48 m. (V′) in advance of the wall.

The piers, 1.80 × 1.50 m., were set 3.48 m. apart with their length on the short axis of the building, leaving an aisle or ambulatory of 5.27 m. between them and the northeast wall (Fig. 73). The bay between the southeasternmost remaining pier and the next was closed by a heavy wall, 0.86 m. thick at the base, with a setback of 0.12 m. on the northeast side. If a second row of similar piers is to be restored above the cistern, the resulting nave will measure about

8.45 m. in breadth. The piers were of block and tile work about a core of rubblework. The mortar differs from that of the walls, being whiter in color, coarser in texture and containing coarse lime nodules, gravel and pottery chips. The facing was laid in alternate bands of six courses of roughly squared blocks and six of broken tiles, respectively 1.30 m. and 0.26 m. high.

The outer walls of the Basilica were clearly not designed to take arches or vaulting. The piers, of different construction and exceptionally massive for the scale of the building, seem equally clearly to be of later date and designed

Fig. 73. – Basilica, Northeast Aisle.

to carry a system of arches independent of the walls. A trial trench has provided evidence that the Basilica as originally planned had columnar supports and possibly a row of shops along the Forum side. The problem awaits solution by excavation.

Temples B and C

Immediately southeast of the Basilica two small temples stood side by side giving on the Forum area. Of both the sturdy podia of polygonal or trapezoidal masonry are in large part preserved. In the center of each clandestine diggers have left large and unsightly pits.

Temple C, the smaller of the two, next the Basilica and separated from the curbing along it by a passage 3.56 m. (XII′) wide, lies on the central short

axis of the Forum. The breadth of its podium, in which truly polygonal shapes pre-dominate (Fig. 74), was 7.70 m. (XXVI′). Its total length is not ascertainable, but was greater than 9.75 m. Little else remains visible.

The length and breadth of Temple B, the larger of the two, may be measured as 16.57 m. × 9.47 m. (LVI × XXXII′), a proportion of 7 : 4. It lay 5.81 m. from the smaller. The blocks of the podium tend to have trapezoidal shapes and to fall into courses (Fig. 75). Along the southeast side and at the north corner the lower courses of the cella walls of heavy mortared masonry may still be seen, set back 1.18 m. (IV′) from the edge of the podium. Before the temple extended a terraced forecourt, some 4.10 m. broader than the podium and in appearance of later date than the temple itself. Its retaining wall on the Forum is visible for a length of twelve meters, built of the same bricklike calcareous sandstone slabs as the walls of the Capitolium (Fig. 76). Beneath it there was at least one stone-vaulted cistern. Along the north west side of the podium, distant from it only 0.89 m. (III′), runs a section some two meters high of coursed rubblework walling, which retains large patches of its original rendering coat.

Fig. 74. – Temple C, Northwest Side.

Fig. 75. – Temple B, East Corner.

Fig. 76. – Temple B, Terrace Wall. Aerarium (?)

Fig. 77. – Aerarium (?), Interior.

AERARIUM (?)

Beyond the twin temples at the end of the northeast side of the Forum stood a small rectangular building, broadside to the open square and accessible from the prolongation of Street Q (Fig. 76). Its exceptionally stout walls, 0.92-0.93 m. thick, of heavy rubblework seem to have been designed to carry a vault, and on either side there remain the stumps of a pair of piers (Fig. 77). The doorway cannot have been more that 1.10 m. wide, enough for the narrow

Fig. 78. – Rock Cutting, looking Northeast.

entrance to a treasure or store chamber. Though the flooring is no longer in evidence, broad areas of the walls within are still covered by their original signinum rendering. Beneath the vanished flooring of the rear half of the room gapes a stone-vaulted cistern or cellar.

Among the vestiges of effaced structures lying along the southwest side of the Forum there is one which calls for notice, lying as it apparently does exactly on the line of Street P. It appears as a long narrow rock-cutting, about 27.00 m. × 3.50 m., between Street 5 and the edge of the Forum (Fig. 78). Into the natural gaps in its rock walls there are here and there, especially toward the Forum end, fitted large polygonal blocks. Along the northwest side, 1.45 m. back from the edge, run the vestiges of a polygonal retaining wall. Toward the center of the cutting, where the sides are best preserved, and just below

the top of either wall is a series of roughly rectangular cuttings, as though for the seating of heavy beams. They average approximately 0.40 m. wide and 0.30 m. deep, spaced at intervals of about 0.80 m. The purpose of this striking arrangement, obviously related to the approach from Forum to Arx, remains enigmatic.

Market Building (?)

On the hillside beyond the southeastern limit of the Forum, above the ramp leading up from the Forum to Street R, in Square X-E, lie the remains of a

Fig. 79. – Market Building (?), Lower Corridor.

large building, whose functional relation to the town center seems evident (Fig. 79). The foundations, in part of rubblework and in part rock-cut, give the outlines of a rectangular structure, some 35.80 m. × 25.00 m., climbing in a series of terraces up the rocky slope. The lowest portion appears as a long corridor – hall, colonnade, arcade or row of shops – 4.53 m. deep. Short lengths of retaining wall north-and south-west beyond the western corner indicate that along these sides of the building there ran a terraced walk.

Baths (Pl. III)

The block in Squares VI/VII-D, bounded by Streets N and O, 5 and 6, near the center of the town and adjacent to the Forum, contains two disconnected

ruins. That to the southwest is clearly a bath. That on the lower ground to the northeast (Fig. 54) consists of several large rectangular rooms, which mount the slope, perhaps terraced one above another. Between the two lies a mass of fallen and tumbled vaulting. The walls of the two are not seen to join at any point, and, indeed, fail to fall into line with each other. In all probability they represent separate buildings.

Fig. 80. – Bath, South Corner.

The Bath, then, was quite small, confined to the west quarter of the block, though perhaps having in the south quarter, where no walls appear above ground, an exercise court. Little of its plan can be made out. That the principal rooms were vaulted is evident from the fallen masses, particularly thick toward the west corner of the building. Perhaps the caldarium occupied this position, for beside it in the street lay a fragment of a circular labrum of white limestone. The chief remains are those at the south corner of a group of small rooms, which supported in part an elevated masonry tank for water supply (Fig. 80). A few meters northeast lay a tiny circular room, probably a frigi-

darium and near the entrance. Its walls were built solidly of broken rooftile and mortar and were originally adorned with sixteen flat pilasters, six of which are still to be seen. The fragments of vaulting which lie about it (Fig. 81) seem to indicate that it was covered by a segmented dome corresponding to the pilasters. Some six meters beyond, a heavy wall, likewise of opus testaceum, and more fallen vaulting may mark the limit of the building.

The water supply for bathing was provided by an exceptionally large system of cisterns, lying for the most part beneath the presumable exercise court south-

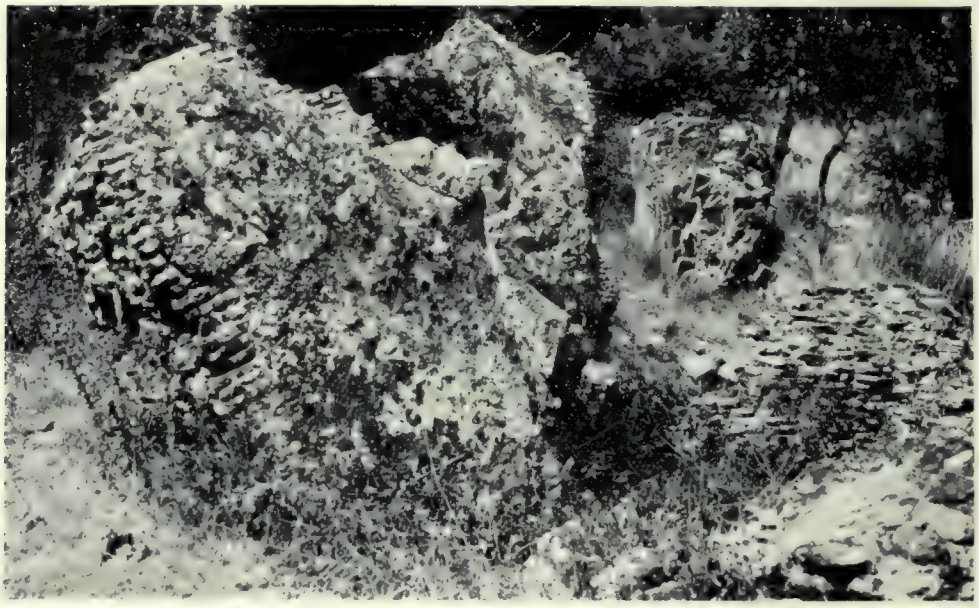

Fig. 81. -- Bath, Frigidarium Vaulting.

east of the bath proper. It consisted of a main chamber, 3.75-3.57 m. wide and 15.18 m. long, covered by a segmental vault of rubblework, from either side of which a branch extended at right angles. That to the southeast passed underneath Street O to join a large open reservoir by a narrower channel. That to the northwest disappears beneath the rooms which support the elevated tank.

Reservoirs and Cisterns

Structures for the storage of water are a striking feature of the site. Cosa's hilltop, like all in this limestone region, is waterless. The rainfall quickly penetrates the porous rock formation, and water is only to be found in springs or

wells about the bases of the hills. Three such springs and three or four wells are in use today about the foot of Ansedonia. None show traces of ancient construction or use, but conditions cannot have been other in antiquity. As today in the nearby hilltown of Capalbio, cattle were watered, clothes washed and drinking water was borne up from sources at the foot of the hill.[69] For the rest, for household uses, for cooking and for emergency stored rainwater was a necessity.

It may be said without exageration that in ancient Cosa practically every public building and every private dwelling possessed at least one cistern for the storage of water. On the town plan (Pl. III) some forty-five have been plotted in broken outline. A score more are known and many lie as yet undiscovered. The town also had a public water supply in the form of three or more large open reservoirs. Reservoirs and cisterns alike were in part at least cut in the living rock. Their walls, whether of rock or of masonry, required an impermeable lining. This was provided by signinum, the hard, durable mortar of lime and crushed potsherds, its surface brought to a high water-resistant polish, which has so well withstood time that many a Cosan cistern might well still serve its ancient purpose.

The open reservoirs were widely spaced over the townsite. Of the three certain examples, one lay hard by the NW Gate (Square V-A) one at the intersection of Streets 4 and K (Square III-D) and one close to the intersection of Streets 5 and O (Square VII-E) beside the Forum. A fourth may perhaps be recognized in an angle of massive walling at ground level beside the NE Gate (Square VIII-B). No trace, however, remains of a corresponding reservoir by the SE Gate. This disposition of the public water supply answered both to the needs of the various quarters of the town in water and to the drainage of the site. The reservoirs in Squares V-A and VIII-B were situated at the lowest points of their respective sides of the town. The reservoir in Square III-D was placed on a level shelf, which interrupts the northwest slope, and that in Square VII-E on the edge of the Forum plateau at the foot of the northeast slope from the Arx. They will presumably have collected the rainwater flowing in or beneath the streets which converged on them.

The three certain examples are large quadrilateral tanks, now half filled with earth and debris and lacking the parapets which must once have enclosed them. They are in part cut in the rock, in part walled with dry polygonal masonry closely similar to that of the Town Wall (Figs. 82, 83). Those in Squares III-D and VII-E were extensively repaired and patched in antiquity with heavy coursed rubblework, and both retain here and there expanses of their signinum linings. The reservoir in Square V-A, the most ruinous of the three, is not like the others rectangular but trapezoidal, owing to its position in the angle of Town

[69] Cf. *Maremma* 2 (1925) 53–59.

Fig. 82. – Reservoir in Square III-D, East Angle.

Fig. 83. – Reservoir in Square VII-E, Northwest Side.

Wall and gateway (Fig. 84). Its long sides measure 18.25 m. and 17.20 m. its short sides 10.70 m. and 9.25 m. The reservoirs in III-D and VII-E are respectively 16.00 m. × 13.30 m. (perhaps LIV × XLV′) and 17.20 m. × 13.30 m. (perhaps LVIII × XLV′).

Fig. 84. – Reservoir in Square V-A, from North.

The reservoir in VII-E appears at some time in its history to have received a covering. From its filling of debris emerges the top of a square pier of coursed rubblework, 1.18 m. (IV′) on a side (Fig. 85). Its position would seem to demand the restoration of a central square of piers dividing the width equally, on which were probably turned arches supporting a floor of planking. The east angle of this reservoir was further at some time rebuilt in random rubblework to make way for the arched opening of a three-foot channel (Fig. 86) connecting the reservoir with an arm of the cistern of the Baths. [70]

The cisterns were vaulted watertight chambers beneath the floors of the buildings which they served. They were normally fed by channels entering just below the spring of the vault, and the

Fig. 85. – Reservoir in Square VII-E, South Pier.

[70] *Supra* 84.

Fig. 86. - Reservoir in Square VII–F, Channel Opening.

water was drawn from them by circular draw shafts pierced through the crown. Though they were usually single and rectangular in plan, the most varied combinations of rectangular forms occur, from rectangles simply placed in series to L-shaped, T-shaped, H-shaped and + shaped plans. Their wide variety betrays no sets of standard dimensions. The shape and size of a cistern was evidently determined by the plan of the building above it. They rarely surpass 3.75 m. in width, nor fall below 1.30 m.

Cistern vaults were built of limestone voussoirs roughly cut to radiating beds, of slabs of calcareous sandstone laid in mortar (Fig. 87), of rubblework or of tile. Of these the first is by far the commonest and may probably be taken in a general way as the oldest work. In a number of instances repairs of original cut-stone vaults were made in sandstone slab or rubblework. The vault of the cistern included in the repairs of the northwest salient of the Town Wall is of tile. [71] In form the vaults are rarely or never perfectly semicircular, rarely truly segmental. In general they tend to be somewhat flattened in the haunches and pointed at the crown with considerable variation in a single vault. Stilted and parabolic forms were freely used to raise the crowns of narrower branches to a level with main chambers. Evidence that centering of a sort was employed is found in the series of corresponding putlog holes, which are occasionally to be seen just beneath the springing. The drawshafts of sandstone slab or rubblework vaults were normally pierced in the crowns of specially built voussoir arches. The openings themselves range between 0.45 m. and 0.60 m. in diameter.

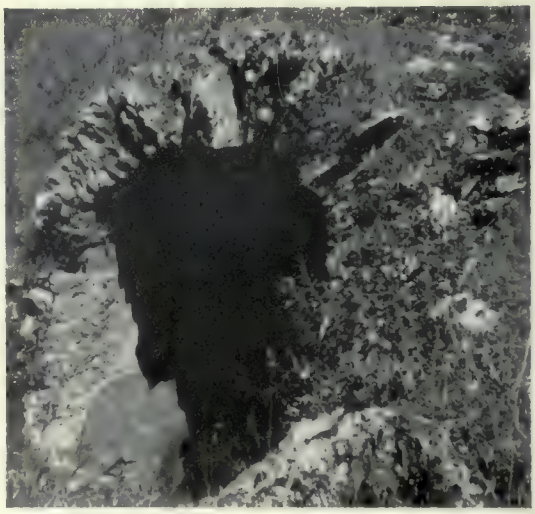

Fig. 87. - Cistern of House in Square VI–D.

[71] *Supra* 36 f.

Houses.

The northwestern half of the townsite appears to have been given over very largely to dwellings. In practically every Square of this portion of the townplan walls have been plotted which can scarcely be other than those of houses. Their construction is that earlier described.[72] In the case of no single dwelling are the visible remains sufficient to yield a readable plan. Yet the characteristics of what is still visible or may reasonably be restored are such as to provoke certain general impressions.

Most striking perhaps is the great uniformity of structure. The houses are all of a piece or of a single period, albeit an extended one. Their relative lightness of walling, taken together with the relatively scant amount of fallen debris, indicates that they were generally of a single story (Fig. 55). No individual complex of walls, moreover, displays the typical arrangement of the units of an atrium house. On the contrary, in several blocks, long continuous stretches of wall appear to bound and subdivide large insulae, in which the individual habitations can only be singled out by their cisterns. These prompt comparison rather with Marzabotto or Vetulonia than with Pompeii.

THE PORT

Portus Cosanus (Pl. II) lay below the hill in the sheltered western end of the eastern lagoon. Its basin was protected on the west by the hill itself and on the north for more than 550 meters by two low rocky hillocks, which lie parallel to and some 220 meters behind the line of petrified dunes which shut out the sea on the south (Fig. 3). The ship channel from the sea cut through the dunes under the very foot of the hill, where the modern drainage canal from Lago di Burano has its mouth.[73] The basin itself is long since silted up (Fig. 88). Along its western margin there runs today a sloping bank of alluvium washed down from the slopes above. Its whole depth, where visible in the gulleys that score it, is thick with fragments of amphorae and dolia, mute witness to the busy quays of the port. Into the western of the twin hillocks to the north a modern quarry has bitten deeply. Trial trenches on its crest have revealed, facing the sea, a small temple of the divinity under whose protection the commerce of Cosa lay. Behind the hillock may still be traced streets of the port

[72] *Supra* 59–63.

[73] The remnant of this channel, an inlet known as « fosso della Tagliata », was in use until late in the sixteenth century as a haven for local small craft and loading place for local grain. *Maremma* 6 (1931) 20-22.

settlement or Succosa. The harbor thus formed was admirably suited to ancient shipping, shallow, enclosed, well-sheltered from the prevailing westerly and southerly winds, dominated by the town and no more than 500 meters from its nearest gateway.

No traces of the ancient harbor installations are now apparent, other than those of the ship channel and its entrance. [74] The dunes, which barred the basin from the sea, at their juncture with the cliffs of Cosa swept sharply southward in a narrow tongue to meet the jutting easternmost spur of the hill (Fig. 89).

Fig. 88. – Port, Basin from North.

Here, where the sandspit was narrowest and where, perhaps, a natural outlet already existed, the channel was dug out beneath the rock wall of the cliffs (Fig. 90). The rock face itself formed the western side, scarped vertically and straightened to a height of 25 to 30 meters for a length of about 140. At the

[74] A large masonry tank, which lies just above the middle of the west side of the basin seems to be of later construction. Its inner dimensions are 9,20 m. × 6,25 m., its walls of heavy limestone rubblework, 0,97 m. thick, with much broken tile and coarse pottery. The remains of four rubblework piers running in a line below it toward the basin are evidence that a conduit once descended to the edge of the basin or inlet. This is, perhaps, the " Fonte della Reina " mentioned in a sixteenth century document as a watering point of barbary pirates (*Maremma* 6 (1931) 21. Similarly the remains of a walled enclosure lying just north of the western of the two hillocks which bound the Port on the north and alongside the Port branch of the ancient road from the NE Gate appear to date from the late middle ages or renaissance.

Fig. 89. – Port, Channel Cutting from East.

Fig. 90. – Port, Channel Cutting from South.

entrance the constant wash of sand, which perpetually threatened to throw a bar across the channel mouth, was countered first by two successive works designed to bring a sandless tidal and wind current to repel it and then by breakwaters.

The first two works are known today as the "Spacco della Regina" and the "Tagliata".[75] The former, manifestly the older of the two, was in origin

Fig. 91. – Port, « Spacco », Scarped Walls.

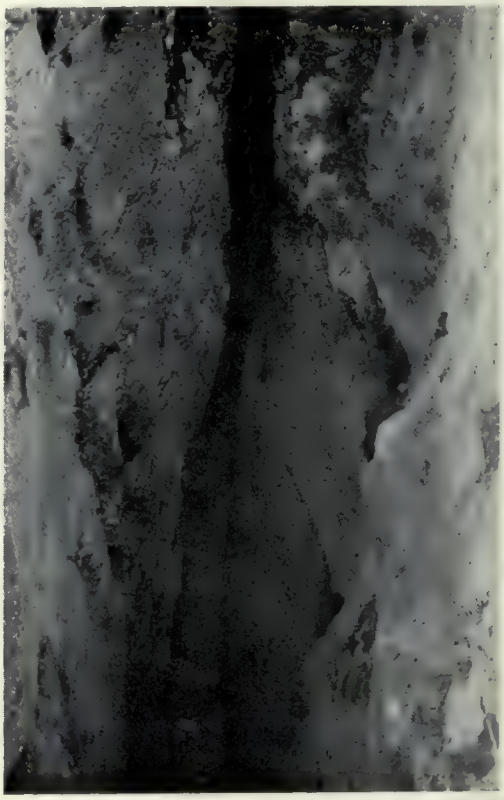

Fig. 92. – Port, « Spacco », Bed.

a natural cleft or crevasse across the southeasternmost point of the hill of Cosa, caused by a fault in the limestone promontory. Its length is some 260 meters, its winding course SSW-NNE from the open sea to a point opposite the channel mouth. Its width varies from one to six meters, save where it intersects caverns or other clefts. Its maximum depth is between 30 and 35 meters. The rock

[75] R. Del Rosso, *op. cit.* (*supra*, n. 11), 1, 84–91, 94–97; Cardarelli, *op. cit.* (*supra*, n. 2), 2, 21 f. For the tides of this coast, v. A. Mori, "La più alta marea del Tirreno – la marea a Porto S. Stefano", *Rivista Geografica Italiana*, 18 (1911).

Fig. 93. – Port, Channel Mouth.

walls of this gigantic natural sluiceway were scarped and hewn to the perpendicular to remove overhanging masses (Fig. 91). Its course was rectified by the cutting away of obtruding angles, and its bed was cleared and levelled so as to admit a free and abundant flow of water (Fig. 92). At the southern end of the channel scarp the cliffs were cut back into a wide box opposite the channel mouth (Fig. 93), so that the current of the « Spacco » pouring through it might scour it and keep it free.

The « Spacco della Regina » is today blocked in several places by fallen masses, and at one point about 50 meters from its seaward end the sea has breached its wall (Fig. 94). One or another of these catastrophes dammed it in antiquity. Its successor was the « Tagliata », wholly artificial but constructed on the same principle. This cutting, four to five meters wide and 70 meters long,

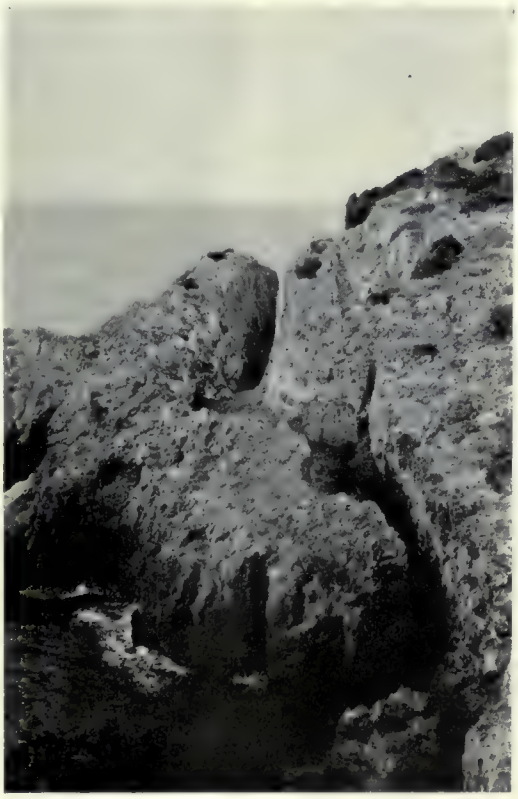

Fig. 94. – Port, « Spacco », Southern End.

Fig. 95. – Port, « Tagliata », Northern End.

part trench and part tunnel (Fig. 95), runs roughly parallel to the northern end of the « Spacco » through the very edge of the easternmost spur of the hill. It is for most of its course separated from the sea only by a thin wall of rock (Fig. 96). Its southern end was in deep water well beyond risk of silt-

Fig. 96. - Port, « Tagliata ». Channel.

Fig. 97.- Port, «Tagliata», Sluice Gate Cuttings.

ing, its northern opened on the channel mouth 20 meters east of the «Spacco». The original plan included sluice gates designed to run in rockcut slots at a point some 22 meters from the seaward end. They would presumably have been closed when the tide was ebbing and in unfavorable weather (Figs. 97, 98). Later, to increase the volume

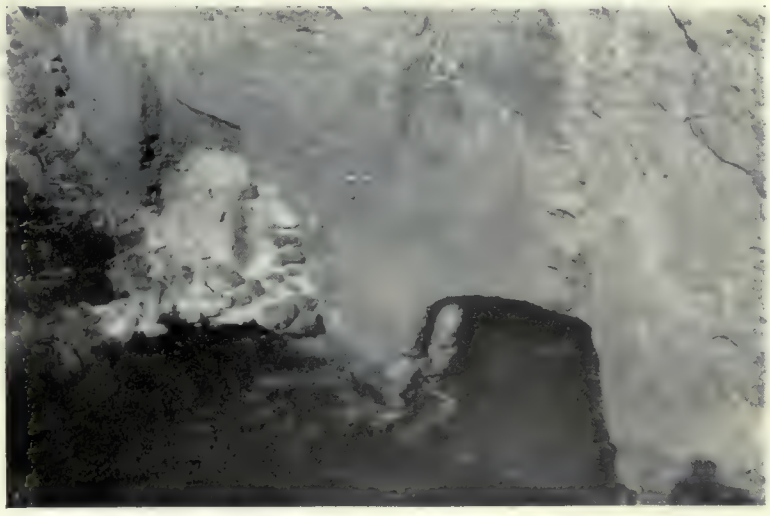

Fig. 98. - Port, « Tagliata », Second Mouth.

and force of the entering stream, a second seaward mouth was tunnelled through the rock to the west of the first and the original bed was deepened and narrowed.

Even with these improvements the "Tagliata" evidently proved not wholly effective. As a last defence against the encroaching sand the mouth of the channel was enclosed between parallel jetties, projecting due eastward from the land some 90 meters into deeper water beyond the bar. These jetties served both as breakwater and training walls. They brought the actual entrance to the channel as far as possible out of the line of the Scirocco and other prevailing southerly winds and narrowed it from an estimated 60 meters to about 20. The southern jetty, advancing directly from the cliff face, broke the force of waves raised by southerly winds. Together they concentrated the scouring tidal currents through the channel mouth. The western portion of the northern jetty turned back at an angle of about 55° to confront the sand wash and maintain the fixed channel width beneath the cliffs.

The substructures of the southern jetty and of the eastern half of the northern lie at present shallowly submerged. The remains of the superstructure of the western half of the northern jetty are in part imprisoned in the sand of the modern beach and in part incorporated into the breakwater of the modern drainage canal (Fig. 99). The system of construction is reasonably clear from these remains. The underwater substructures were of rubble stone of great dimensions, laid or piled without mortar or clamps. These supported above water massive piers of rubblework, presumably connected by arches (Fig. 100). The three piers of the western half of the northern jetty originally measured 8.90 m. × 5.90 m. (XXX′ × XX′) and stood 13.30 m. (XLV′) apart. Three more such piers may be restored on the remaining half of the northern jetty and four on the southern.

The Port, its channel and entrance works await further and more detailed study. The last, at any rate, represent the period when Cosa's shipping, naval or mercantile, was sufficiently brisk or sufficiently promising to call for the execution of impressive works of engineering. The decline of the Port under the empire is, on the other hand, documented by the great villa built on the dunes beside the old channel. Its northern wing was built out over the basin, obviously already silted up and useless for shipping, while the now inoperative "Tagliata" was obstructed by the vaults and partitions of fish ponds or boat houses (Figs. 97, 98).

TOMBS

The northeast and northwest roads to the Port and the Via Aurelia were beyond a certain distance from their respective gates lined with tombs. These appear for the most part as tumbled heaps of rubblework

Fig. 99. - Port, Piers of Jetty.

walling half-hidden amid the brush and boulders of the hillside. Traces of fifteen or sixteen may be made out. A single isolated tomb, S1, still stands partway down the southwest slope of the hill, some 160 meters below the Arx Postern, as though on a vanished pathway from it to the tiny cove beneath. Most of the tombs appear to have been small, rectangular structures of the aedicula sort. A few were of more monumental character. Three of the better preserved ones will serve as examples.

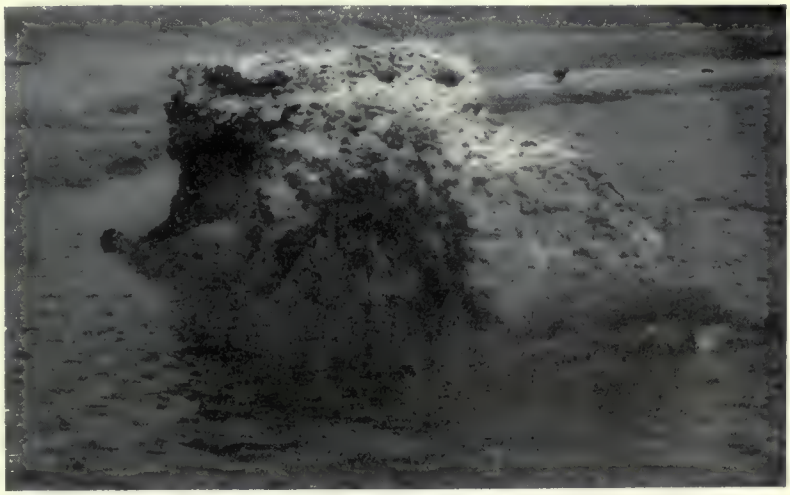

Fig. 100. Port, Pier of Jetty.

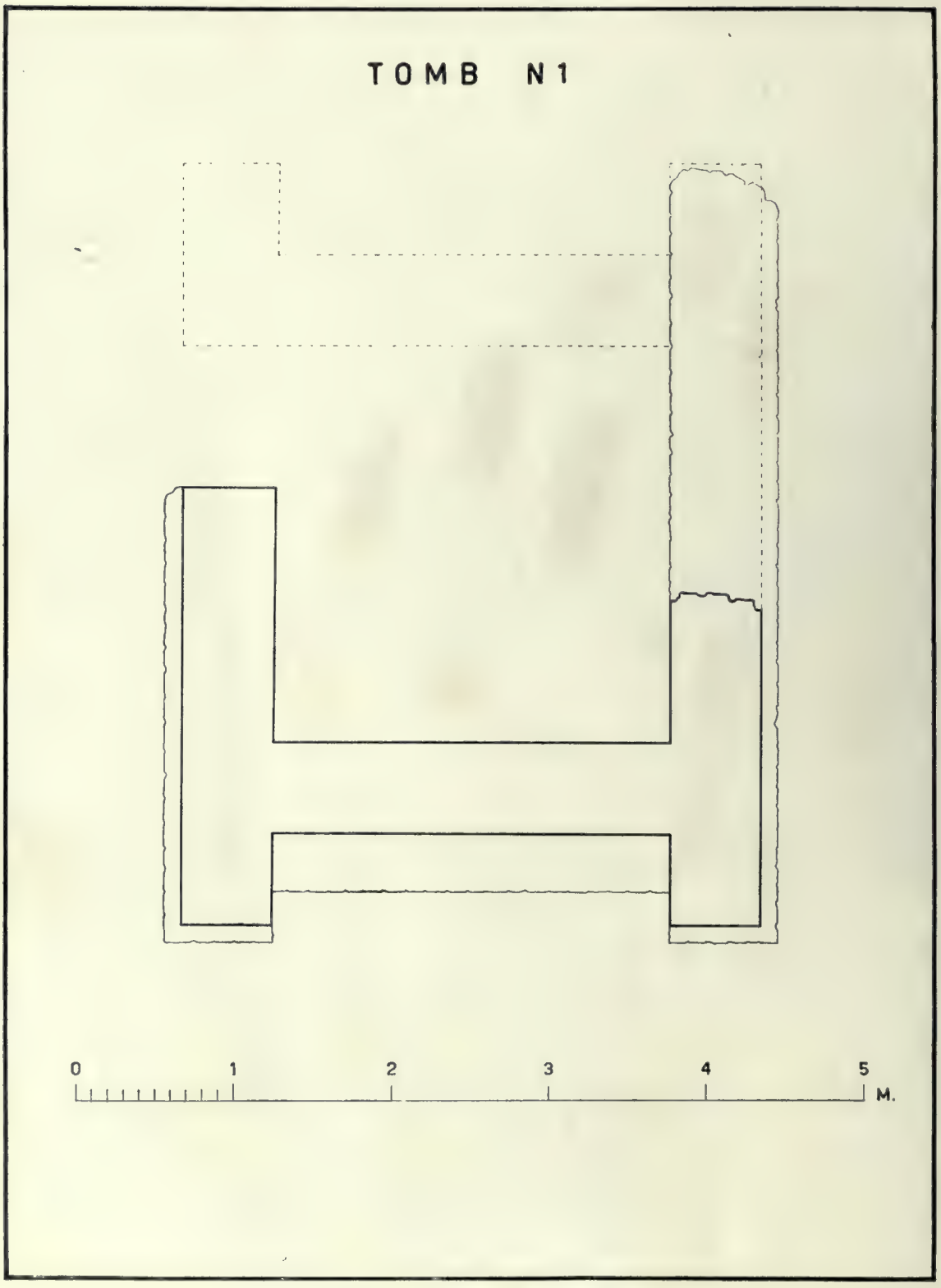

Fig. 101. – Tomb N1, Plan.

Tomb N1 lies on the west side of the northwest road some 400 meters from the NW Gate. The walls of the end toward the road stand to a height of over three meters. The end away from the road is razed. Its general size and the simplicity of its plan may be taken as representative of the majority of Cosan tombs. The visible remains support the restoration proposed in Fig. 101 of a square chamber with an opening beside one corner, the lateral walls of which are prolonged for a distance equal to their width to form antae or pilasters

Fig. 102. – Tomb N1, from Southeast.

on the facades. The chamber, 2.52 m. (VIII S') square, would provide space for three funeral couches. The walls of rubblework, sandstone slab on the outside and random on the in, rise from a projecting socle or foundation of random rubblework (Fig. 102). They now stand stripped of the coats of stucco, which carried whatever molded decoration there may once have been, including, probably, a heavy base molding run over the projecting foundation.

Tomb S1 (Figs. 103, 104), of roughly equivalent outside dimensions, is a more perfect and elaborate example of the same type. Its ruin, gutted by trea-

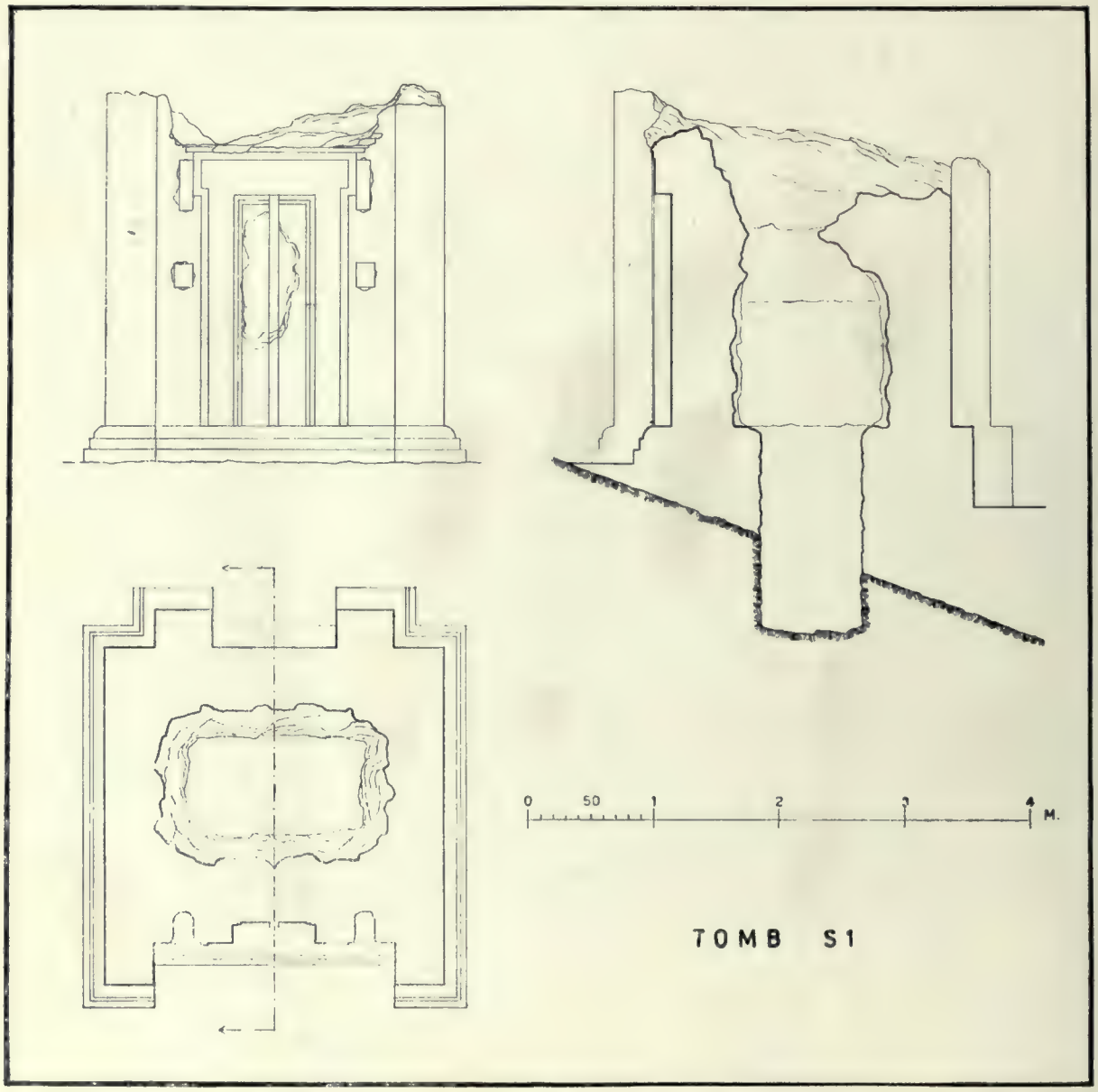

Fig. 103. Tomb S1, Plan, Section, Front Elevation.

sure-hunters, stands about three meters high on an artificial terrace. It seems not to have had an accessible inner chamber. In the center of the rubblework mass a roughly hollowed or vaulted space, some VI′ by IV′, was simply left void directly above a smaller rock-cut pit. The building itself is rectangular,

2.40 m. × 2.70 m. Its side walls project beyond the facade to form antae or pilasters. Similar pilasters at the rear are set closer together within the corners, perhaps as more effective buttresses against the sharp downward slope. The whole facade between its framing pilasters was elaborately fashioned to the semblance of a closed doorway with jambs, lintel, parotids and double doors. The

Fig. 104. – Tomb S1. Facade.

doorway is of a modified "Doric" type, exceedingly tall and narrow, with traces of a cornice coming directly above the lintel. The consoles, which were carved separately and inserted in cuttings, have disappeared. The purpose of the pair of rectangular sockets beneath is unclear. Of the doors, the hinge stiles and the top rail are molded with a Lesbian cyma. The cover-joint is plain. About the base of the monument ran a heavy quarter-round torus, 0.10-0.11 m. high.

The structure was of random rubblework, save on the facade, where sandstone slab was used to facilitate the cutting of the cores for the doorway mold-

ings, themselves carried out in stucco. Large patches of the signinum undercoat are still to be seen and in rare corners bits of the fine, white surface coat.

Although the antae of Tomb S1 rise some 0.40 m. above the apparent top of the false doorway, neither this nor the foregoing example yields a clue as to what may have lain above. Both tombs are nevertheless obviously related on the one hand to the sepulchral aediculae of old Etruria and to the third century "tempietti" of Paestum [76] and on the other to the class of first century tombs represented by the Garland Tomb in Pompeii and the Tomb of Bibulus in Rome. [77] The forms of the doorway of S1, however reminiscent of Etruscan models, [78] are Hellenistic.

Tomb E1 is a monument of a different sort. Descended from late Classical or early Hellenistic monumental tripod supports, it finds its closest congeners in a class of monuments of the early empire, spread from Asia Minor to Italy. [79] Yet its structural and formal qualities are the same as those of the two tombs examined above, and it must be of approximately like date.

Tomb E1 (Figs. 105, 106) is today a conspicuous landmark on the lower slope of the northeast ridge of Cosa. In antiquity it stood on the southwest side of the Port branch of the northeast road, 2.30 m. from the roadway. It consists of a cubical base, 2.64 m. on a side and 1.55 m. high above the foundation, on which is set a curvilinear triangular prism of rubblework, the apex of which is centered on the facade toward the road. The upper portion, which stands to a maximum height of 2.36 m. above the base, is in plan an isoceles triangle, the sides of which are curved convexly on a radius equal to the length of a side. The angles were rounded and treated as engaged colonnettes. Except for the projecting foundation of random rubblework, the monument is faced with sandstone slab, in which the cores of the stucco moldings about the base of the die and the foot of the upper portion appear as projecting courses. Centered immediately below the apex of the upper portion toward the road is the countersunk panel, 1.10 m. × 0.45 m., for the setting of the inscription. Behind are the remains of a walled enclosure.

DATE

Nothing has been observed on the site of Cosa, nothing yet found beneath its surface, which might be attributed without question to Etruscan *Cusi.

[76] A. Minto, « Edicole funerarie etrusche », *StEtr* 8 (1934) 107-118; P. C. Sestieri, « Tempietti funerari nelle vicinanze di Paestum », *NS* (1948) 155–184.

[77] Overbeck-Mau, *Pompeii*[4] (1884) 405; R. Delbrueck, *Hellenistiche Bauten in Latium*, 2 (Strassburg 1912) 37–41.

[78] Å. Åkerstroem, *Studien ueber die etruskischen Graeber* (" Acta Instituti Romani Regni Sueciae ", 3, Lund 1934) 76-107.

[79] E.g A. von Gerkan, *Milet*, I, 6 (Berlin 1922) 55-80; G. Brusin, *Aquileia* (Udine 1928) 254.

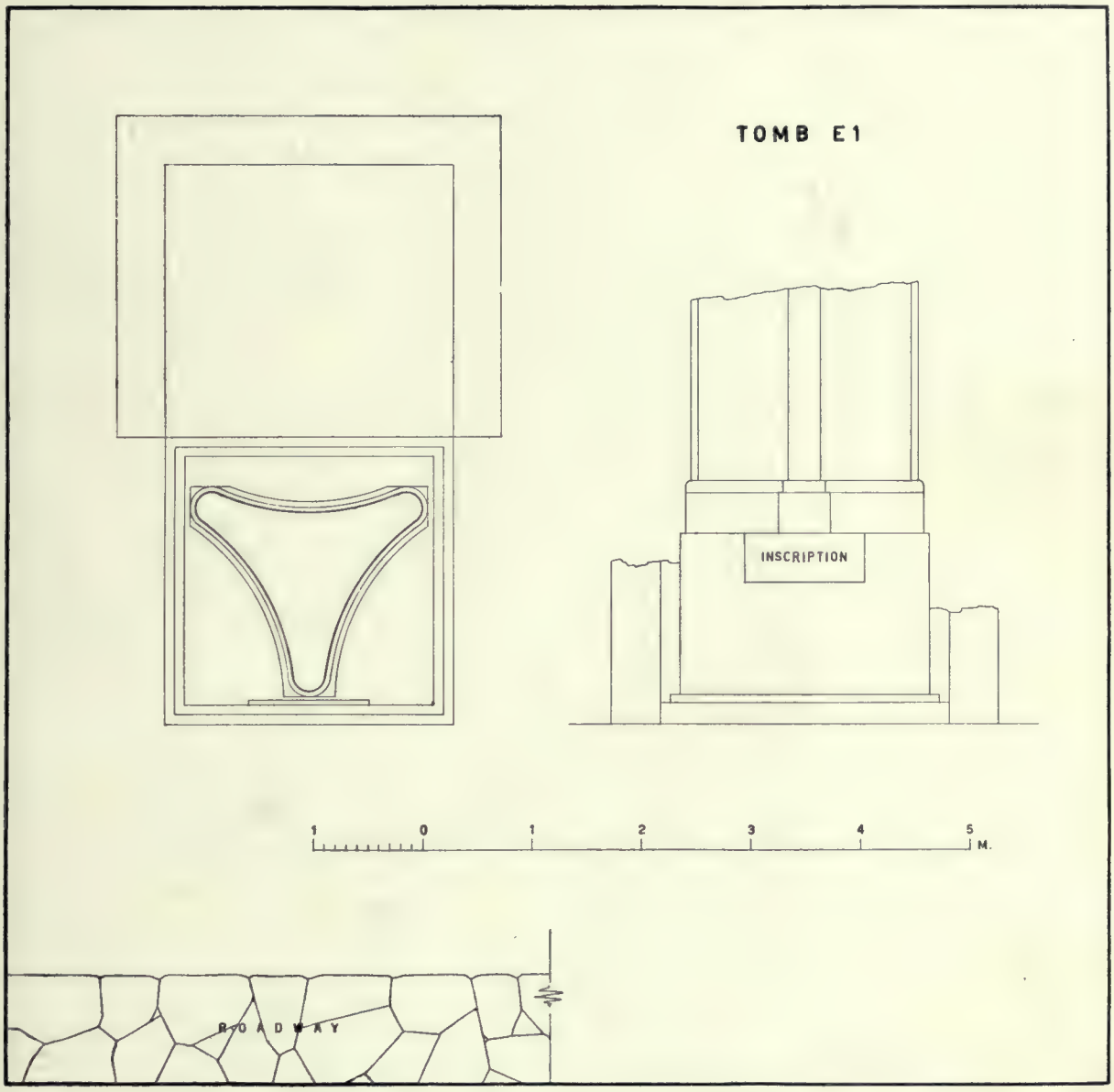

Fig. 105. – Tomb E1, Plan, Front Elevation.

There is, on the contrary, every indication that all the visible remains of buildings date at the earliest from the foundation of the Roman colony.

The soundings made in and beside the Town Wall give evidence that the wall was erected during the first half of the third century B. C.[80] These sound-

[80] *Supra* 51-57.

ings, while they do not constitute a sampling general enough to establish certainty, create a strong presumption that the Town Wall is that of the Roman colony, built

Fig. 106. -- Tomb E1, from South.

in the years immediately after 273 B. C. Given the historical circumstances of the founding of the colony and given the role it was intended to play, there can be little doubt but that it was strongly fortified from the outset. The perfect homogeneity of the wall in all its parts signifies that the work

of fortification was carried out in a single campaign and probably in the shortest time physically possible. [81]

This presumption is fully borne out by the character of the Town Wall itself. It has been more and more generally recognized since the soundings made by Savignoni and Mengarelli at Norba in 1901 and 1902 [82] that the stupendous series of town walls of polygonal masonry in the limestone regions of central Italy is no older than the Roman colonization of those regions, and that most of them are products of the fervid activity of the later fourth and third centuries B. C. [83] Cosa is of the series but typologically late in it. The finely jointed and highly finished field face and rough inner face it shares with the most advanced portions of the walls of Cora, Signia, Norba, Anxur, Circeii, Alatri, Alba Fucens, and Saturnia. [84] It is distinguished by its towers, portcullissed gates and arches.

The great polygonal town circuits of central Italy are essentially towerless. In this they resemble the earliest tufa ashlar town walls of the same region. Both herein betray their derivation from earthworks and reflect the unchanging procedure of siege operations. Polygonal walling had in addition to reckon with the inherent technical difficulty of constructing right or acute angles. At the most the designers of such walls resorted, as at Norba, to rare and sporadic bastion-like projections of varying size and shape, brought into the trace at critical points, beside gates or on vulnerable curtains. The use of more or less regular tower systems on two fronts at Cosa is thus an innovation, fruit, we may guess, of the experience of Hellenistic military engineering and siege warfare gained in the later Samnite and Pyrrhic campaigns in south Italy. At Cosa this use is still tentative, not extended to the entire circuit and supplemented by such devices as the interior platform supports. The earliest known completely and systematically towered fortification in central Italy is, in fact, the tufa ashlar wall of Falerii Novi, built soon after 241 B. C. [85]

[81] *Supra* 32, 38, 41.

[82] *NS* (1901) 548-554, 558 f.; (1903) 259-262; *Atti del congresso internazionale di scienze storiche*, 5 (Rome 1904) 260-265.

[83] Cf. G. Lugli, "Criteri di massima per la datazione dei più antichi monumenti romani", *RendLinc* ser. VII, 3 (1942) 388; "Le fortificazioni delle antiche città italiche", *RendLinc* ser. VIII, 2 (1947), 294-307.

[84] Cora: A. Accrocca, *Cori* (Rome 1933) 45-60; G. Saeflund, *op. cit.* (*supra*, n. 61) 263. Signia: G. Lugli, *Enciclopedia Italiana* 31, 305; Saeflund, *op. cit.* 263. Norba: *Supra* n. 82. Anxur: G. Lugli, *Anxur-Tarracina* ("Forma Italiae, Regio I, Latium et Campania", I, 1, Rome 1926) 57-69. Circeii: T. Ashby, "Monte Circeo", *Mél* 25 (1905) 172-181; G. Lugli, *Circeii* ("Forma Italiae, Regio I, Latium et Campania", 1, 2, Rome 1928) 1-4, 17-21. Alatri: H. Winnefeld "Antichità di Alatri", *RM* 4 (1889) 127-145. Alba Fucens: C. Promis, *Le antichità di Alba Fucense* (Rome 1836) 102-111, 128-172; Saeflund, *op. cit.* 256 f.; cf. *Eranos* 28 (1930) 195. Saturnia: A. Pasqui, "Saturnia", *NS* (1882) 52-63; A. Minto, "Saturnia etrusca e romana", *MonAnt* 30 (1925) 593-598.

[85] Zonar. 8 18; *Fasti Triumph. Capit.* XXII. The implication of Zonaras' ὕστερον δέ can scarcely be stretched to cover a century or more as suggested by Saeflund, *Eranos* 28 (1930) 197 and accepted by P. J. Riis, *ActaA* 5 (1934) 84.

The portcullis, like the tower system, came to central Italian fortification through the example of Hellenistic Sicily and Magna Graecia, probably in the early third century.[86] At least one of the gates of Alba Fucens, considerably more primitive in plan than those of Cosa, was fitted with a portcullis. Falerii Novi, again, was fully equipped with them. Cosa falls between the two. The arch too appears in Cosa's fortifications confidently used, not only for the lesser spans of the Arx Postern and the tower doorways but also, to judge from the NE Gate, for the three town gateways. Older polygonal town walls, do not show it. Whatever date be given to the Porta all'Arco of Volterra,[87] the gates of Falerii Novi were regularly arched on spans similar to those of Cosa's gates,[88] and the generalized employment of the arch for the most varied uses from the end of the third century implies a long apprenticeship.[89]

The succession of buildings on the Arx, whose dates are secured by the results of the excavations, confirms and supplements this dating of the Town Walls to the early years of the Roman colony. It enforces the further conclusion that town plan and walls are not to be separated. The plan was drawn up as a single conception and laid down as a single act, and that a Roman one. Of this the carefully premeditated siting and disposition of elements in accord with what we know of ancient theory, the regular use in its basic element, the streets, of the Roman foot leaves no doubt.[90] The axes of the plan, moreover, were determined by the same factors which dictated the location of the gates, while the Arx was an integral part of both fortifications and plan.[91]

This plan included streets and Forum, Arx and Eastern Height together with the enveloping walls. To these we must add other constituent structural elements of the colony. Some, if not all of those structures, the workmanship of which is closely similar to that of the walls and which served the immediate needs of the whole community, must also have been part and parcel of the initial act of colonization. These will include temples, at least one of the twin temples on the Forum and probably Temple A by the NW Gate, and the large open reservoirs.[92] Site, water supply, defence public life and worship were the basic necessities to be provided for by the founders of an ancient

[86] *RendLinc* ser. VIII, 2 (1947) 304 f.; G. Saeflund, "The Dating of Ancient Fortifications in Southern Italy and Greece", *OpusArch* 1 (1935) 102 n. 2; cf. *op. cit.* (*supra*, n. 61) 261 f., where the dating is again too low.

[87] M. E. Blake, *Ancient Roman Construction in Italy from the Prehistoric Period to Augustus* (Washington, 1947) 199.

[88] L. Canina, *L'antica Etruria marittima* (Rome 1846-1851) Tavv. X–XII, XV.

[89] G. Lugli, *RendLinc* ser. VII, 3 (1942) 388 f.

[90] *Supra* 23, 27.

[91] *Supra* 26 f.

[92] *Supra* 69, 78-80, 85-87.

town, [93] and we may accept the earliest provision for these at Cosa as coincidental with the foundation of the colony.

These elements combine to present our clearest image of the physical structure of a Roman colony of the first historical period of intense colonization. It is a compact example from late in the period, fruit of long practice and tradition, in which we may expect to find summed up the results of past experience. The position on a height and the irregular site circumscribed by a fortified line of strategic advantage liken it to such earlier foundations as Signia, Norba, Setia, Privernum, Alba Fucens and Luceria. The street plan is characterized by the formative dominance of the streets themselves, laid out on a framework of crossing main axes solely with regard to the lay of the land, the approaches and the focal points of town life. The resultant communications were radial; the resultant building blocks, though not uniform, were generally long rectangles. This, as the plans of Norba and Ariminum (268 B. C.) remain in their general lines to show, was the typical layout of Latin colonies founded prior to the Punic wars. [94] The long rectangular block, which is the mark of foundations of this first period, was superseded in the second by subdivision into almost square units. [95]

The archetype of this earliest Roman colony plan is furnished by the late sixth or fifth century Etruscan colony of Marzabotto. [96] In it the basic pattern of the Latin colonies of the first period appears in its purest form, developed on almost level terrain: crossing main axes, subdivision by secondary streets into long, rectangular but not rigidly uniform blocks. Whatever the remote origins of the plan of Marzabotto, from it onward the filiation in central Italy is clear, documented by the unanimous Roman tradition concerning the ritual of foundation and unaffected by developments in the eastern Mediterranean. [97]

[93] Vitr. *De Arch.* 1. 5, 1; 1. 6. 1; 1. 7. 1.

[94] Norba: *NS* (1901) facing p. 560; *Atti del congresso internazionale di scienze storiche*, 5 (Rome 1904) 272, tav. I. Ariminum: G. A. Mansuelli, *Ariminum* (" Italia Romana: municipi e colonie ", ser. I, 6, Rome 1941) 62-67. Present knowledge of the plan of Norba does not go far enough to permit a judgement as to whether it was also formally and functionally radial. The base of the plan of Ariminum, like that of Alba Fucens (303 B. C.) – Academie royale de Belgique, *Bulletin*, 5[e] ser., 35 (1949) 432 – and many a citizen colony, was a through highway, in this case the Via Flaminia, crossed by a second main axis.

[95] Earliest example: Placentia, 218 B. C. *Parma e Placentia Romane* (" Archivio storico per le provincie parmensi ", ser. 3, III, 1, Parma 1938); *Atti del III convegno nazionale di storia dell'architettura* (Rome 1940) 300; cf. K. Lehmann-Hartleben, " Staedtebau ", *RE* 3 A (1929) 2046.

[96] *MonAnt* 1 (1889) 283-297; *StEtr* 2 (1928) 777 f.

[97] E.g Varro, *Ling.* 5. 43; Livy, 1. 44; Servius, *ad Aen.* 5. 755; Plut. *Quaest. Rom.* 24. Cf. A. von Gerkan, *Griechische Staedteanlagen* (Berlin 1924) 123-133; Lehmann-Hartleben, *op. cit.* (*supra*, n. 95) 2031-2046. I cannot follow A. Boethius, *Roman and Greek Town Architecture* (" Goeteborgs Hoegskolas Årsskrift ", 54, Goeteborg 1948) 6-9.

The forum of Marzabotto is wanting. Presumably it was long and narrow, like the fora of early colonies; witness the Forum of Cosa beside Tarracina (329 B. C.) and Spoletum (241 B. C.).[98] The effects of the act of foundation were at Cosa, as earlier in the colonies of Ostia and Tarracina, embodied in a pomerial street, which was repeated in the nearly contemporary Ariminum.[99] Cosa, moreover, with its three gates, three main streets and three chief and peripheral temples, was a *iusta urbs* in terms of the Libri Rituales of the Etrusca disciplina – a town, *in qua*, to paraphrase Servius,[100] *tres portae erant dedicatae et tot viae et tot templa*. Norba and Alba Fucens again appear to form links in the chain that leads directly from early Etruria to Roman Cosa.[101]

The initial equipment of the colony of 273 apparently continued to serve its needs with little change as long as the town lived. To this skeleton were added

[98] G. Lugli, *Anxur-Tarracina* (op. cit., *supra*, n. 84) 85-90; C. Pietrangeli, *Spoletum* (" Italia Romana: municipi e colonie ", ser. I, 1, Rome 1939) 51.

[99] G. Calza, *Ostia* (Rome 1924) 25-28; G Lugli, *op. cit.*, 94; G. A. Mansuelli, *op. cit.* (*supra*, n. 94) 67.

[100] *ad Aen. 1. 422*; cf. Festus, *Gloss. Lat.* 386 and the critical observations of L. Banti, *StEtr* 17 (1943) 203-209 and U. Bianchi, *MemLinc* ser. VIII, 2 (1950)354-356.

[101] Outside the sphere of early Roman colonization ritual and topographical triplicity, the pomerium and the long forum appear singly or together as ancient acquisitions of the farflung central Italic peoples. Umbrian Iguvium on the north and Samnite Pompeii on the south are witness (*Tabulae Iguvinae*, passim; cf. G. Devoto, *StEtr* 4, 1930, 221-247; I. Rosenzweig, *Ritual and Cults of Pre-Roman Iguvium*, 1937, 16, 67. M. Della Corte, " Il pomerium di Pompei ", *RendLinc* ser., V, 22, 1913, 261-308). The forum of Paestum is probably of this order (P. C. Sestieri, *Paestum*, Rome 1950, 15 f.). Whether the street plans of the enlarged Pompeii and of its close congeners in Etruscan Campania, Naples (K. J. Beloch, *Campanien*[2], Breslau 1890, 66-70; B. Capasso, *Napoli Greco-Romano*, Naples 1905, 5-82) and Herculaneum are to be attributed to the direct or indirect influence of Etruscan example, remains an open question. The champions of direct Etruscan influence (K. Lehmann-Hartleben, " Staedtebau ", *RE* 3 A, 1929, 2035-2037; R. C. Carrington, *Antiquity* 6 1932, 1-23; A. Sogliano, *Pompei nel suo sviluppo storico*, Rome 1937, 38–56), of " Italic " or Samnite practice (most recently A. Boethius, *Gli etruschi in Pompei*, " Symbolae Philologicae O. A. Danielson Octogenario Dicatae ", Upsala 1932, 1-12) or of Greek intervention (A. von Gerkan, *Der Stadtplan von Pompeii*, Berlin 1940, 31 f.; A. Maiuri, *Introduzione allo studio di Pompei*, Naples 1949, 70 f.) must alike abide the verdict of renewed stratigraphical excavations. At Pompeii an impressive case for Etruscan influence at first or second hand can be made out from the envelopement of the ancient nucleus with an armature of crossing main axes, which determine areas of long rectangular blocks divided by minor streets, if this be taken together with the pomerium and the recent finds of Etruscan material (Maiuri, *op. cit.* 64, 150 f.). Nearby Sorrento and fourth century or Hellenistic Selinus in Sicily show similar traits (P. Mingazzini et F. Pfister, *Surrentum*, " Forma Italiae, Regio, I, Latium et Campania, II ", Rome 1946, 29-38; J. Hulot et G. Fougères, *Sélinonte*, Paris 1910, 191-212). Naples and Herculaneum, on the other hand, were planned on a system of long rectangular blocks arrayed perpendicularly to one or more uni-directional streets and separated by narrow angiporti. Sicilian Soloeis of the Hellenistic period follows a similar scheme (S. Ferri, *Le Arti* 4, 1942, 250-254). All three provoke comparison with the plan of fifth century Olynthus, a plan which in another adaptation served the Seleucid foundations in Syria (D. M. Robinson and J. W. Graham, *Excavations at Olynthus*, 8, Baltimore 1938, 29-38; F. E. Brown, *Excavations at Dura-Europos* IX, 1, New Haven 1944, 23-26).

the flesh and tissue of town life in the shape of dwellings and tombs, other public and religious buildings. These too underwent little or no structural change from the time they were built. That time we are bound, from what we may observe superficially, to estimate almost solely on grounds of construction.

Their construction is uniformly and almost exclusively mortared masonry and what we have called rubblework, coursed or random, fashioned from the local materials: limestone, as blocks or lime, and the coastal sand. Mortared masonry appears as the product of a natural evolution from dry-laid polygonal or trapezoidal masonry, made possible by the use of lime mortar. Mortared masonry together with coursed rubblework is found in the earliest monumental structures of the colony, temples and fortifications.[102] In the other buildings mortared masonry, coursed and random rubblework, or coursed and random rubblework alone, are combined in a shrewd economy of statics.[103] If these be considered as three steps in a progressive course of development, our present limited evidence is sufficient to attest only the accomplishment of the first two at Cosa in the second quarter of the third century. This is more probably the defect of our evidence than of the type of walling itself.

Random rubblework, in any case, appears as the forerunner or collateral ancestor of Roman opus incertum. It differs from incertum in being composed of larger units and in being laid solid, not built up as face and core. It is now generally admitted that opus incertum was perfected at Rome in the course of the revolutionary rebuilding of the city at the beginning of the second century, after the second Punic war and the great fire of 210.[104] Behind it must have lain some form of random rubblework, perhaps in an early time, as at Pompeii, mortared with clay for lack of abundant limestone close at hand. Fourth and third century Pompeii, indeed, offers a close parallel to the random rubblework of Cosa, developed from clay-mortared rubblework.[105] The immediate antecedents of Roman opus incertum may perhaps be seen in the coursed rubblework with mortar of lime and black pozzolana of the earliest remains beneath the « quattro tempietti » of Ostia.[106]

The strictest similarity, however, in both materials and fabric to the random rubblework of Cosa is found in a group of buildings about Terracina, where

[102] *Supra* 38, 40, 47, 60.

[103] *Supra* 60-63.

[104] G. Lugli, *RendLinc* ser. VII, 3 (1942) 384-386; ser. VIII, 5 (1950) 299 f.; A. Boethius, *Three Roman Contributions to World Architecture* (" Festskrift Tillaegnad J. Arvid Hedvall ", Goeteborg 1948) 62 f.

[105] R. C. Carrington, *JRS* 23 (1933) 128-132; cf. the results of the recent probings in depth, *NS* (1942) 411-413; (1944-45) 130-135, 136-140, 153 f.; A. Maiuri, *Introduzione allo studio di Pompei* (Naples 1949) 85.

[106] R. Paribeni, *MonAnt* 23 (1916) 443-452.

polygonal, trapezoidal and mortared masonry are combined with coarse random rubblework, often showing tile and sherd snecking, in lime-and-sand mortar. Chief among them are the walls of the acropolis of Tarracina itself, the villa called the « piccolo tempio » with wall decoration in the first Pompeian style, the " villa of Galba " and the temple of Circe on Monte Circeo.[107] The dating of these to the time of Sulla is purely conventional. They are assuredly much earlier. The acropolis walls of Tarracina might better be associated with the defense of Latium against Hannibal.[108] Cato in the early second century gives specifications for farm buildings to be built in precisely this manner *ex calce caementis silice*.[109] Scattered over Latium are the remains, ill-reported and undated, of structures of the same class, older than the typical work in incertum and representing for the most part the first stage of villa building in Rome's hinterland.[110] Cicero's ancestral villa below Arpinum was such a one.[111] There may be cited as conspicuous examples the villa terraces west of Ciciliano near Tivoli, Nibby's " Saxula ", or that at Grotte di Torri near Fara Sabina.[112]

In short, there is good evidence both inferential and factual for the presumption that at Cosa random rubblework, if not already in use at the foundation of the colony, was generally employed there during the period immediately following. The uniformity of its handling, taken together with the standardization of dimensions and the signs of building in long, insula-like units,[113] plainly implies that the bulk of dwellings at least was put up in a relatively short space of time, say at the outside over the third and the first half of the second centuries. They may probably be taken to represent the original permanent housing of the colonists.

Some notion of the lapse of time during the construction and subsequent active use of these and other later buildings may be gathered from the vaulting of their cisterns. The most ancient and by far the commonest form of vaulting was, as we have seen, of limestone voussoirs. The great cistern of the Basilica, which itself exhibits the fully developed norm of construction in mortared masonry and rubblework, was vaulted in this manner.[114] Vaulting and repairs

[107] G. Lugli, *Anxur-Tarracina* (op. cit., *supra*, n. 84) 153-160, 163-166, 194-198; T. Ashby, *Mél* 25 (1905) 191-193; G. Lugli, *Circeii* (op. cit. *supra*, n. 84) 28-31.

[108] Livy, 22. 15. 11.

[109] *Agr.* 14 f.; for silex, v. G. Lugli, *RendLinc.* ser. VIII, 5 (1950) 298-300.

[110] M. E. Blake, *op. cit.* (*supra*, n. 87) 101-104.

[111] Cicero, *Leg.* 2. 1. 3.

[112] *Analisi storico-topographico-antiquario della carta de' dintorni di Roma* 3, 2 (Rome 1849) 62-64; R. Fonte-a-Nive, *Sui munimenti ed altre costruzione poligonie od epimonolite* (Rome 1887) 78 f.; G. B. Giovenale, " I monumenti preromani del Lazio ", *DissPont* ser. II, 7 (1900) 42-46.

[113] *Supra* 63, 89.

[114] *Supra* 79.

of earlier vaults in brick-like slabs of calcareous sandstone bring us to the early second century, the time of the building of the walls of the Capitolium in this material. [115] It was employed also for the terrace wall of the forecourt apparently added to Temple B on the Forum and for the ornamental portions of tombs, whose other details agree well enough with this date. [116] Vaults of rubblework with radially set pieces of tile seem to come last. The cistern, which was part of the repairs at the northeast salient of the Town Wall, has been mentioned. These repairs, together with the rebuilding of Tower 20, may well be related to the Social Wars. The cistern of the Bath is of this variety, and is shown to be considerably later than the Reservoir in Square VII-E. [117] The bath itself, whose plan, as far as may be divined, resembles with its tiny round frigidarium the Stabian and Forum baths at Pompeii, can hardly be put later than the first quarter of the first century B.C. [118]

The monumental gateway of the Forum was also vaulted with rubblework. The voussoir arches on either facade of the central bay are laid in a header-stretcher bond, unexampled elsewhere but closely related to a widespread pre-Augustan bond. [119] Both stem from the bonding of stone vaults, and the parallels closest in style to the Cosa arches are presented by the Pons Mulvius of 109 B.C. and the Porta San Agostino at Cortona. [120] The austere facade of the Forum Archway may on this showing be dated in the first half of the first century. The proportion, 1 : 4, of side to central archways is, in fact, to be paralleled only in city gates, such as the Herculaneum Gate at Pompeii, or in the commemorative arches built to mask them, as at Fano. [121] It is strikingly different from the proportions of our earliest hitherto known independent triple archway, that of Augustus in the Roman Forum, and of all subsequent examples. [122] The gateway of Cosa's Forum might have been lifted bodily from its place in a town wall and planted in the center of the town. It is both our earliest and most telling proof of the soundness of Richmond's argument for the decisive influence of city gates on the development of the Roman commemorative arch. [123]

[115] *Supra* 59, 88.

[116] *Supra* 79, 99, 101 f.

[117] *Supra* 84, 87.

[118] Overbeck-Mau, *Pompeii*[4] (1884) 200-233; *NS* (1931) 564-575; (1932) 507-516; A. Maiuri, *op. cit.* (*supra*, n. 105) 239-263.

[119] *Supra* 74; M. E. Blake, *op. cit.* (*supra*, n. 87) 134, 197, 209-212, 226.

[120] R. Delbrueck, *Hellenistische Bauten in Latium* 1 (Strassburg 1907) 3-11; Neppi Modona, *Cortona* (Florence 1925) 61-63; cf. W. J. Riis, *ActaA* 5 (1934) 82.

[121] Overbeck-Mau, *Pompeii*[4] (1884) 54 f.; I. A. Richmond, "Commemorative Arches and City Gates in the Augustan Age", *JRS* 23 (1933) 156-158.

[122] G. Gatti, *Rend Pont* ser. III, 21 (1945-46) 105-122; cf. L. B. Holland, *AJA* 50 (1946) 52-59.

[123] Op. cit. (*supra*, n. 121) 172-174, as against H. Kaehler, "Triumphbogen", *RE* 7A (1939) 480-482; cf. M. E. Blake, *op. cit.* (*supra*, n. 87) 203-209.

The examination of the forms and fabric of the unexcavated buildings of Cosa has thus led us to the following conclusions. The town was built up practically as we find it by the middle of the first century B. C. The system of building in mortared masonry and rubblework of the local materials was practiced continuously from the founding of the colony, and local builders remained little affected by technical and formal progress in the capital. Once erected the buildings of the colony underwent, with the probable exception of the Basilica, [124] no radical rebuilding or modification.

These findings are corroborated by a mass of negative evidence. There is first the total absence of types of building which are to be expected in any Italian municipium of the late Republic or early Empire. We find no trace of theater, amphitheater or colonnaded spaces. Facilities for public bathing remain scant and rudimentary. The Forum, hemmed in by the irregular facades of its motley buildings and penetrated by streets, remains like the forum of Pompeii before the erection of its colonnades, like the Roman Forum before the second century. [125] There is second the total absence of architectural and decorative forms referable to the late Republic and Empire, no trace of the formal language of vault and apse, nor of the decorative language of Corinthian or composite. There is third the total absence of the typical materials and techniques of these periods. The ruins disclose no brick and concrete, no reticulate, no structural or ornamental marble. For traces of all these in the vicinity one must look to the great villas round about and to the tombs of Succosa. [126] A possible brief resuscitation in the early first century of our era is documented only by dedications and statues on the Arx and, perhaps, by the latest harbor works. Apart this, Cosa's architectural development seems to have been arrested well before Augustus. Strabo's description of Populonia finds its commentary here. [127]

In the ruins of Cosa, then, we discern the lineaments of a Latin colony of the old style, scarcely retouched by Hellenism, expunged by no later hand. During the brief span of its heyday the area embraced by its walls was turned to account to the last of its 135,000 odd square meters. Of them, some 20,000 were occupied by the public streets, and of the remaining useful area of 115,000 m^2., around 29.000 were at a conservative estimate taken up with public buildings, leaving 86,000 m^2. for habitation. In other terms, about a quarter of the available space was given up to Arx, temples, Forum, Bath and reservoirs, in evident disproportion to any conceivable population of the compact little town.

[124] *Supra* 78.

[125] *Supra* 73; *NS* (1941) 371-409; (1942) 253-285; K. Lehmann, *AJP* 59 (1938) 290-296; A. Boethius, *OpuscArch* 1 (1935) 189-195; *Eranos* 43 (1945) 89-110.

[126] *Supra* 20 f.

[127] *Supra* 20 n. 36.

If, in fact, comparing Cosa with Pompeii, whose population was distributed in similar one and two story dwellings, we employ the coefficient of 250 inhabitants to a hectare calculated by von Gerkan, we reach a figure of only 3000-3500.[128] If, on the other hand, we assume for Cosa the minimum number of settler families sent out to Latin colonies in the known cases between 334 and 218 B.C., to wit the 2500 of Cales (334) and Luceria (314),[129] and if we further assume that the 1000 fresh colonist families received in 197[130] simply covered the colony's losses, we must estimate a constant of at least 7500 free inhabitants. This number would by the same token seem to imply either the incredible density of 555 inhabitants minimum per hectare or an inhabited area considerably more than twice as great.

The solution, valid also for Alba Fucens, must lie in the obvious consideration that only about half of the colonists, those whose allotments lay nearest, actually dwelt in the town. The others, whose holdings were scattered remotely over Cosa's wide territory, lived on their lands or in the country hamlets. The town served them all as refuge and market, as the center of worship and administration. Its ample public buildings were for all; its private only for some. That this was the common situation of old Latin colonies, may also be read between the lines of the historical record. It is taken for granted, for example, in Livy's account of the Samnite raid on Interamna Sucasinas in 294.[131]

This severance of the colonial community can but have speeded its eventual disintegration, setting an example in tranquil times for town-dwelling landholders to remove to their lands and for the market and administration to follow to more easily accessible ground. Only the gods, in the end, held steadfastly to their ancient seats.

[128] A. von Gerkan, *Der Stadtplan von Pompeii* (Berlin 1940) 28 f. His coefficient, moreover, is probably higher than should be applied to Cosa, where relatively so much of the total area was not used for habitation.

[129] Livy, 8. 16. 13; 9. 26; cf. A. Afzelius, *Die roemische Eroberung Italiens* ("Acta Jutlandica, Aarskrift for Aarhus Universitet", XIV, 3, Copenhagen 1942) 133. Alba Fucens in 303 accommodated 6000 settler families on a site topographically very similar to Cosa's (Livy, 10. 1). Its 33, 5 hectares are to Cosa's 13.5 roughly as 6000 to 2500.

[130] *Supra* 18.

[131] Livy, 10. 36. 16-18; cf. the action at Cales in 296, Livy, 10. 20. 11-15.

ADDITIONAL ASIATIC SARCOPHAGI

BY

MARION LAWRENCE

TABLE OF CONTENTS

PAGE

PRINCIPAL TYPE, WITH THREE AEDICULAE 120

ARCADE TYPE WITH FIVE ARCHES 150

TYPE WITH HORIZONTAL ENTABLATURE 152

FRAGMENTS OF INDETERMINATE TYPE 158

TECHNIQUE 161

FIGURE TYPES 162

CHRONOLOGY 166

ADDITIONAL ASIATIC SARCOPHAGI

Although the type of columnar sarcophagus peculiar to Asia Minor has long attracted the attention of scholars, more than twenty-five years have passed since a comprehensive study was made of the group. Since thirty-three new examples have been discovered by excavation or otherwise in this interval and since about half of these are unpublished, a new study seems in order. The aim of this article is consequently to relate the new material to the catalogue published by Prof. C. R. Morey, *The Sarcophagi of Claudia Antonia Sabina and the Asiatic Sarcophagi.*[1] It will follow the form of the earlier book for convenience in using the two together and will assume familiarity with Professor Morey's terminology, his basic classifications of Lydian and Sidamara technique, and the architectural types of three aediculae, arcade type with five arches, and type with horizontal entablature. As the author has elsewhere questioned the validity of including type E of the central gable with lateral arches, and believes it to be an imitation of the Asiatic series made for the western market, this category is omitted as well as type B with undivided figure frieze which, due to marked differences in the capitals and other ornament, warrants a separate study as an offshoot of the Asiatic types.[2] Professor Morey's carefully reasoned chronology has been generally accepted by subsequent scholars and is here followed. Finally the geographical dispersion of the new examples, twenty-four of which are in Asia

[1] *Sardis*, V, part 1, Princeton 1924. All plate references to this book have been omitted as the alphabetical arrangment by place makes them easy to find. The following sarcophagi have changed location since the publication of Morey's book:

Athens A and Athens B to the Byzantine Museum, Athens.

Eskishehr A to Istanbul, Museum.

Richmond to London, British Museum. F. Eichler, "Zwei Kleinasiatische Säulensarkophage", *JDAI* 59–60 (1944–45) 129–136, has suggested a reconstruction of the latter sarcophagus with the fragments, Athens A and Athens B. This theory, however, is untenable since the fragments come from sarcophagi of different sizes.

I wish to express my gratitude to Dr. Morey who has given me the benefit of his advice and criticism and to the following scholars: Emir Maurice Chehab for photographs of the Beirut fragment and permission to publish it; Mme. Seniha Morali and Nezih Firatz, both of the Istanbul Museum; the latter most generously gave me his photographs of a number of fragments in remote parts of Turkey; Signora R. Calza for photographs of the Ostia fragments; and finally Dr. Otto Brendel for many helpful suggestions as to the interpretation and origin of the themes.

[2] A Sarcophagus at Lanuvium, *AJA* 32 (1928) 421-434; "Columnar Sarcophagi in the Latin West", *Art B* 14 (1932) 160 f.; *The Sarcophagi of Ravenna* ("Monographs on Archaeology and Fine arts" 2, College Art Association of America, N. Y. 1945) 2, n. 12.

Minor or were found there, with one in Istanbul and one elsewhere in the Near East (in Lebanon), one in Dalmatia and six in Rome or its vicinity, strikingly confirms Dr. Morey's basic thesis that the series was the product of Asiatic workshops.

PRINCIPAL TYPE, WITH THREE AEDICULAE

ADALIA (Attalia, Phamphylia). Seven fragments, found near the city gate, Kale-Kapù. G. Moretti, *Annuario* 7 (1924) 486-92, figs. 5-11; M. Lawrence, "A Sarcophagus at Lanuvium", *AJA* 32 (1928) 428 n.

1. Fragment of three niches the center and right half of the long side of a sarcophagus (Fig. 1) H. 1.00; W. 1.58. The base is undecorated. Between two spirally fluted columns, of which only the lower sections remain, stands a woman in chiton and himation. The head and both hands are missing. This is Morey's figure type 4 and should be compared with the second figure on the

Fig. 1.

front of Rome D.[3] Two feet and part of a male leg are all that exist of the next niche. A nude torso with the chlamys over the left shoulder has been placed above this and may belong here. Although very fragmentary, this seems to be type 3. The terminal niche shows a seated woman also headless and with both feet and arms fractured. She is, however, clearly the type of the seated woman in a corresponding position on the front of Rome D. Both drapery and chair should be compared, as well as the pedestal under her and the high base of the columns.

Fig. 2

2. Fragment of niche with lower half of standing woman. (Fig. 2). H 0.63; W. 0.70. The lower sections of the columns remain, together with their bases, but the figure is so fractured that only the position of the feet and the folds at the bottom of the drapery can be determined.

3. Fragment of base of intercolumniation with foot wearing a sandal (Fig. 3). H. 0.38; W. 0.58. A pedestal like the one under the seated woman has been inserted between the two bases which furthermore have a curious ornament which Moretti describes as a species of flower. As he points out, the intercolumniation is also narrower, 0.18 instead of 0.26 to 0.27, a fact which probably indicates it is the right hand terminal niche of one of the ends.

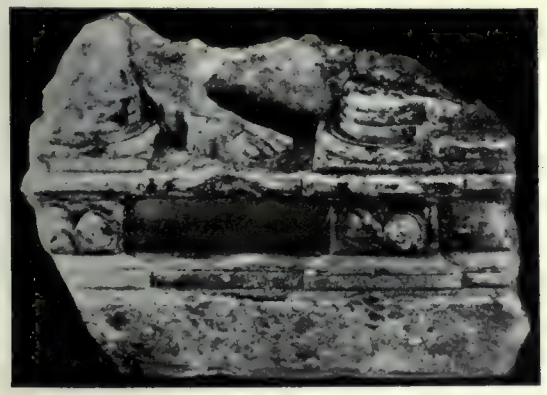

Fig. 3.

4. Fragment of entablature with gable and conch at the right, the upper part of a standing figure at the left (Fig. 4) H. 0.50; W. 0.35. The position of the mantle over the head, with a fold carried horizontally across the breast and held by the left hand, as Moretti has pointed out, suggests the hieratic pose of a priestess. Although the face is obliterated and the modelling of the drapery

[3] fig. 108. The figure types run from fig. 105 to 125 and hereafter plate references will be omitted.

over the breast so summary that one cannot be sure of the sex of the figure, this interpretation may well be correct, in which case the adjacent niche would have held a grave portal. Compare Athens A and Rome E. The conch customarily appears over the door. Its large proportions and the relative height of the figure to the architecture are close to those on the left end of the Sidamara sarcophagus where also the ornament finds a close parallel. Our conch, however, has larger and few scallops and in this resembles Rome E.

5. Fragment of entablature with gable and conch at right, a small conch above the mouldings at the left (Fig. 5) H. 0,29; W. 0.40. This is so unlike fragment 4, showing a different form of conch, much less coloristic foliation and retaining the original form of the egg-and-dart moulding, that if Moretti had not published it as part of the same sarcophagus, I should question whether it did not come from another one of Lydian technique.[4] In the absence of the capital it is impossible however to be certain. The conch above the level entablature is usually a Lydian feature but appears on Ankara A; it is found on Sardis B, Rome D and Vienna and among the new examples Beirut and Smyrna B, C. Finally the forms of both the egg-and-dart and the Lesbian cymation find their closest parallels on the fragment of Smyrna E, described below, of Lydian technique.

Fig. 4.

6. Fragment of drapery (Fig. 5) H. 0.35; W. 0.24. Vertical folds of the skirt of a standing figure.

7. Female head (Fig. 6) H. 0.20; Moretti includes this with a question mark as part of the sarcophagus and suggests that it may have belonged to the seated woman of fragment 1. This seems extremely unlikely as what is left of the drapery looks as if her himation was worn like a hood over her head; compare the seated woman in the center of the back of the large sarcophagus in Ankara. The arrangement of the hair, furthermore, with what Moretti describes as a diadem, so far as I know, cannot be paralleled on any Asiatic sarcophagus so far discovered.

[4] v. p. 489. He says that the marble is identical, the proportions correspond and that the style and technique have evident affinity.

Moretti reconstructs the over-all measurements of the sarcophagus as H. 1.00; L. 2.60 to 2.70. He describes a fragmentary cover of conch type which may

Fig. 5.

have belonged to it but gives no photograph. He compares the trough with Melfi, with which, as can be seen, it has little affinity, and makes no attempt to date it. Excluding the pieces which seem to me doubtful (5 and 7), the sarcophagus in Adalia finds its closest comparisons with the Sidamara sarcophagus and with Rome D and E. I should place it somewhat after Rome D on the basis of the figure style but slightly before Sidamara, thus in the first quarter of the third century. Sidamara technique. Fragment 5, if it comes from a different sarcophagus, would be earlier, from its similarity to Smyrna E. c. 180-185. Lydian? technique.

Fig. 6.

ANKARA A. Found in 1930 near the village of Shohut Kasaba (Synnada) now in the Museum (Figs. 7-12). Sarcophagus with cover. H. 1.23; W. 2.67; D. 1.53. White marble. M. Schede, *JDAI* 45 (1930) *AA* 464, 471-4; W. H. Buckler, W. M. Calder and W. K. C. Guthrie, *Monumenta Asiae Minoris Antiqua* 4 (1933) 26-28, pl. 23-5; G. Rodenwaldt, "Ein Lykisches

Motiv ", *JDAI* 55 (1940) 44-57; F. Sarre, *Ein Wiedergefundener Kopf von Sidamara-sarkophag in Ankara* (" Halil Edhem Hatira Kitabi ", Turkish Historical Soc., VII ser., no. 5, Ankara 1947) 193-197; N. Feratlz, "Ankara Arkeoloji Müzendeki Sidamara tipi Lehit parcalari ", *Türk Tarih Arkeologya ve Etnografya Dergisi* 5 (1949) 79-87, figs. 1-2.

Lid. Of couch form, only the lower part of this remains. It is decorated along the back and two ends with a flat incised rectangular pattern alternating

Fig. 7

with upright fleurons on the mattress itself, below with a flat palmette foliation on the sima and a row of dentils. The lower section thus repeats the design of the cover of Sardis B. The back is rough hewn as if never finished. The lifting bosses as on Melfi and Sardis B are present and are also unfinished.

Figured Decoration. Front (East Side) (Fig. 7). 1. A seated male figure faces right. The head and upper section of the chest are missing, as well as the rear legs of the faldstool. This is type 13 and should be compared with the seated poet on the center of the sarcophagi of Selefkeh and Sidamara. The arrangement of the himation and the feet are similar, but the right arm is brought

across the body as on Rome A.[5] 2. Standing woman (not a man as described by Buckler), head and neck broken. The female head found later and today in the Museum at Ankara may belong here. The draping of the himation and pose of the arms repeat those of the muse on the front of Sidamara, although the stance differs as the weight is here on the left leg. 3. Draped man wearing chiton and himation. The latter is brought in a fold across the body and held by the left hand. The right arm hangs down parallel to the body, to which it is attached at the thigh by a strut of marble. The face is broken, but a mass of stone for the head shows its attachment to the architecture behind. The weight is on the right foot. This is the same type as the bearded man on Sardis B (front 5) and the figure on the end of Ismid. 4. Standing woman turned slightly to the right. Her himation is draped over the back of her head, covers the right arm which hangs at her side, and is brought horizontally across the body so that she holds a fold of it in her left hand. This is essentially the pose of type 20, and should consequently be compared with Selekfeh, front 2 and Konieh A, fragment 3. In both of these the head though today broken, was apparently uncovered. A variant of this appears on the fourth figure on Konieh B. As the woman there holds a helmet and looks towards the man on her right, her himation is raised to reveal more of the skirt but the arrangement over the head is very similar. The face (Fig. 11) is in excellent preservation. As Buckler pointed out, the coiffure with its carefully arranged waves is very close to that of Claudia Antonia Sabina of Sardis B. It should also be compared with the coin-portraits of Crispina, the wife of Commodus, and the earlier portraits of Julia Domna, before the ears begin to show.[6] The features are also very similar to the former, the eyes show the same incision for the pupils, the shape of the forehead and the lips are much the same, as well as the neck with its angular junction with both the chin and the breast. The general effect is more delicate, however, as the chin is more pointed and the cheeks lack the heavy jowls which give Claudia the appearance of having a double chin. 5. A bearded man, wearing a chiton and with a himation draped over his left shoulder, sits on a faldstool facing to the left. His right hand touches his chin, his left is extended across his lap and holds a rotulus. This is a new type (Fig. 45) which appears in fragmentary form on Ostia A but with some variation in the drapery. The figure is almost completely intact except for a section across the top of the head (Fig. 12) and minor injuries to the overhang of the himation.

[5] See F. Sarre, *Ein wiedergefundener Kopf vom Sidamara-Sarkophag in Ankara* ("Halil Edhem Hatira Kitabi", Turkish Historical Soc. VII ser. no. 5, Ankara 1947) 193-7. If Sarre is correct a male head now in a private collection in Berlin belongs here. He says that the line of fracture with the drapery fits over the breast.

[6] Morey, *op. cit.* 17, fig. 16.

Back (West Side) (Fig. 8). 1. and 5. The Dioscuri (?) holding spears but without the identifying horses. 1 is nude except for high boots and the chlamys, which is buckled on his left shoulder and hangs in a loop over his left arm. He seems also to be holding a wreath. His right hand holds a spear, of which the lower half is broken away, and his head is turned slightly towards the center. The pose is essentially that of type 12, although both arms are lower and should be compared with the left Dioscurus on the fronts of Selefkeh and Sidamara.

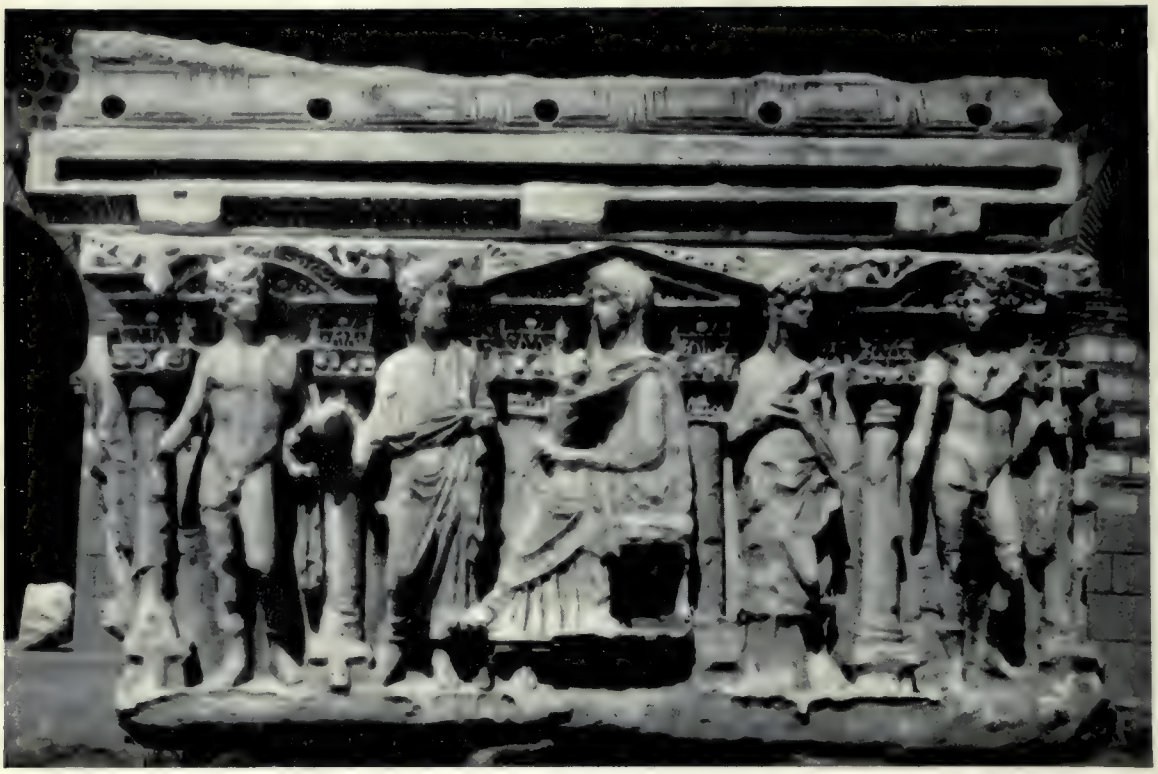

Fig. 8.

5 varies the stance, as the weight is on the right leg (compare type 22). His chlamys is arranged, however, as on the corresponding Dioscurus of the Sidamara sarcophagus. Like his companion his head is turned slightly to the center, and he carries a spear, of which, however, only a small central section remains. Dioscuri wearing boots are unusual but not unique as they occur on a mosaic floor in Ostia, in the House of the Dioscuri.[7] Although they usually have horses,

[7] G. Becatti, "Case Ostiensi del tardo impero", *Bollettino d'Arte* 33 (1948) 207, fig. 41. According to Becatti the mosaic dates after a rebuilding of the house in the second half of the second century.

they occasionally appear without them as here and on the sarcophagus in Kephissia and on an altar in the Roman forum.[8] 2. A bearded male figure, looking right towards the seated lady in the central aedicula, wears a chiton and himation and holds a rotolus in his left hand. His pose, the arrangement of the clothing and his relaxed right arm, which is attached to the thigh by a marble strut, repeat those of the central figure of the front. 3. A seated female figure faces left, her body almost completely in profile. She wears a chiton and a voluminous himation, which is draped over her head and covers the right arm, which is bent and held close to the body making a tight "sling". This goes across her breast and hangs in a long fold down the back over her left shoulder. Her left arm is bent and rests on her lap, holding an unrecognizable object. The legs of the faldstool are broken as well as part of its cover which hung down vertically in back. The figure is badly weathered, and there are a few minor injuries. This is clearly the same type as the fifth figure on the front of Rome D and the seated woman of Adalia 1 and Rome L. (Fig. 44). 4. A female figure, her head turned to the right, stands in the pose of type 4. Her right arm is bent and held tightly against the body and covered by the himation, which is also draped over her head. The left arm hangs at the side. Except for the slight turn of the body this is very close to the first figure on Adalia 1, where unfortunately the head is missing. The fourth figure on the front of Sardis B and Ismid, however, show the veiled head of our lady. There is even more weathering here than on figure 3 and considerable damage both to the face and the folds of the skirt.

Fig. 9.

Right End (north side). (Fig. 9). The upper third, including most of the entablature and all the heads, was broken and lost when tomb robbers cut into the sarcophagus, leaving the lid in position. All the figures are badly weathered.

[8] C. Robert, *Die antiken Sarkophag-reliefs*, II (Berlin 1890) pl. 3, no. 9. *NS* (1901) 99, fig. 51.

Fig. 10.

1. A standing man in chiton and himation carries a rotulus in his left hand, while the right is bent and held close to his body by the himation. Except for the latter feature he repeats type 2. 2. A heavily draped woman sits on a circular chest (?) facing right, her leg extending into the middle of the next intercolumniation. This should be compared with type 5 on the front of Sardis B. The substitution of the circular seat for the faldstool also occurs on Smyrna E. It should be compared with the similar seats under the women on the front of a child's sarcophagus in Beirut and on a curious sarcophagus in Konieh.[9] On both of these a handle is clearly visible such as appears badly weathered in our sarcophagus. The most likely explanation is that this is the marriage or dowry chest. 3. A standing man in the pose of type 1. This also should be compared with Sardis B, where the first figure of the right end shows the form, an extremely popular one on the Asiatic sarcophagi.

Left End (south side) (Fig. 10). 1. A standing woman, the head gone, turns towards the grave portal in the central aedicula. Her right arm is bent across the body and held a plate of offerings; compare the priestess on the left end of the Sidamara sarcophagus. Here, however, it is in a very fragmentary

Fig. 11.

[9] F. Cumont, "Un sarcophage d'enfant trouvé a Beyrouth", *Syria* 10 (1929) 221, pl. 40, 2. Cumont calls it "un siège massif" and makes no attempt to explain it. For the Konieh sarcophagus, v. G. Rodenwaldt, *JDAI* 55 (1940) 51, fig. 7, who does not even mention this feature.

state. The ox at her feet fortunately is well preserved. It appears in the same position but with the head broken on Athens A. The woman is in the pose of type 6. She probably wore her himation draped over her head as on the latter fragment and as on the right end of Sardis B. The grave portal finds its closest parallel with the tripod in front and lighted altar on Richmond fragment 1, although the front leg of our tripod is missing. The ornament of the mouldings and the gable above should be compared with the left end of Rome E, where also the proportion of the figures to the architecture is approximately the same in contrast to the Sidamara sarcophagus, where the door has shrunken in size. The flaming altar also is like Rome D, as Buckler points out, but his statement that "here for the first time the portal is flanked by personages offering sacrifice in honour of the dead" clearly is wrong in view of the Sidamara sarcophagus itself. 3. A standing bearded man with his himation draped over his head turns slightly towards the centre. His outstretched right hand is broken, and there is considerable damage to the folds of his mantle, which falls in a long cascade at the left. The surface of the chiton is completely gone as well as that of both feet, although their position is clear. The head, however, is in good preservation although somewhat weathered. It should be compared with that of the seated man on the front (Fig. 12). This is the only example so far discovered on the Asiatic sarcophagi of a mature man, presumably the deceased himself, in the act of sacrifice with the himation over his head. Septimius Severus, however, so appears in the relief on the Arch of the Silversmiths in Rome, a monument which also shows Julia Domna, cited above for comparison with the standing woman on the front[10] (Fig. 11).

Fig. 12.

[10] Morey, *op. cit.* fig. 16.

The Ankara sarcophagus is unusual in showing four seated figures. If our interpretation is correct, the two on the front are both men as at Melfi; they might represent the deceased as inspired by two of the muses. The other seated figures are clearly women and may be the wife.

Ornament. Pedestals appear under the seated figures on the long sides. This is like Rome D and the fragments at Beirut and Rome L. The ends show a continuous high podium but the right one is so weathered that no ornament is distinguishable. The left, however, seems to have had masks on the bases of the columns as on both long sides. The entablature shows the interruption of the Lesbian cymation by coloristic foliage, a characteristic of the Sidamara technique. It finds a close parallel on Rome E, already cited for the grave portal, on Athens A and on the Richmond fragments; compare especially the very round and isolated ovolo and the sharply pointed and widely flaring dart on the latter. Finally the flat, " string-bean " technique of the palmette above is close to that on the Sidamara sarcophagus itself. The spandrel ornaments above are very fragmentary, but on the front small figures of Eros and animals, a dog or lion, and a lion attacking a bull, can be made out. Over the intercolumniations are swags, and palmettes form the acroteria of the central gable. Similar designs appear on the back with crouching animals in very fragmentary state at the sides. The left end is the best preserved with headless lions at each corner, palmette acroteria on the central gable and over each intercolumniation a small conch shell, against which the tops of the heads impinged. This latter feature is found on Sardis B and Rome D and on the new examples both at Beirut and Smyrna B, C.

Our comparisons for the Ankara sarcophagus place it at the very beginning of the Sidamara series, with Rome E and Richmond, and before the Sidamara sarcophagus itself, which shows much greater attenuation of the figures and a dwindling in size of the grave portal. The similarity of the coiffure of the standing woman on the front to the head of Claudia Antonia Sabina of Sardis B also points to an early date. Arguing from this, Buckler places the sarcophagus in the last decade of the second century, a conclusion that is further supported by our comparisons with work of Septimius Severus. The later rather than the early part, however, seems to be indicated, close to the year 200. This would make the Ankara sarcophagus the earliest one of Sidamara technique so far discovered.

ANKARA B. Found in Yükseklik, now in the Museum (Fig. 13). Small fragment. H. 0.30; W. 0.52. White marble. Feratlz, *op. cit.* fig. 3. The bust and head of a youth facing to the right is in front of a gable which encloses

a conch shell. The upper moulding has a flat rinceau design, below this is a band of foliation then coarse dentils. On the impost block is a large and isolated ovolo flanked by coloristic foliage which also covers the lower half of the block. The capital is completely obscured by a broken mass of stone which seems to have been some object, now unidentifiable, held by the youth. His head, which is in excellent preservation, is derived from the same Hellenistic type as the young boxer from Tralles, now in the Museum at Istanbul. The ornament finds its closest parallel on the sarcophagi of Selefkeh and Sidamara. Second quarter of third century. Sidamara technique.

Fig. 13.

Fig. 14.

ANKARA C. Found in Yükseklik, now in the Museum (Fig. 14). Small fragment. H. 0.54; W. 0.37. White marble. Feratlz, *op. cit.* fig. 4. The head and torso of a man wearing a chiton and chlamys, the latter falling in broad, heavy folds. His face is smashed. His left arm is bent and seems to have held a scroll. The right-hand section of an arch enclosing a conch shell and part of the capital below it remain. The technique of the ornament resembles Altyntash; the draping of the tunic and mantle, the youth with a shield on Athens A. c. 225. Sidamara technique.

ANKARA D. Found in 1931 in street leading northeast towards Keci Oren, now in the Museum (Fig. 15). Small fragment from the back of a sarcophagus. H. 0.36; W. 0.75. White marble. K. O. Dalman, "Archäolo-

gische Funde in Ankara, 1931," *JDAI* 47 (1932) *AA* 254-5, fig. 10. Feratlz, *op. cit.* (*supra*, p. 124), fig. 8. As Dalman pointed out, this repeats almost line for line the upper part of the second rider and his horse and the head and neck of the third horse on the back of the Sidamara sarcophagus. The upraised right hand holding a weapon of the first rider appears at the left. The second rider is broken just above the right elbow and diagonally downwards across the torso, although the left hand holding the reins is intact. His chiton and chlamys fall in much the same folds as the rider on the former sarcophagus, although the projecting fold of the latter is broken at the bottom. The pose of the head is also comparable, and our rider wears the same kind of a tightly fitting cap. The technique on the Ankara fragment is a little more careless, however, the coarse grooving of the drapery more obvious, and the two horses' heads are identical in height, as opposed to the slight variation of the Sidamara sarcophagus, where the right hand one is a little higher. The architecture also differs in omitting the enclosing archivolt and using fewer and larger scallops in the conch. A corbel supports the conches in the same manner, however, and has the same mouldings, as far as it is preserved. A coloristic, indeterminate foliation fills the spandrels, but is somewhat coarser and larger in scale on the Ankara fragment. The omission of the archivolt occurs on three late examples of Sidamara technique, Bari and New York and on a fragment in Istanbul, C, discussed below. The extremely close resemblance of this fragment to the back of the Sidamara sarcophagus makes it probable

Fig. 15.

Fig. 16.

that it came from the back of a similar sarcophagus, i. e. one which was on the front of the principal type with three aediculae. As in Istanbul C the architecture is submerged behind the figures, a feature which is not found on any of the five-arch sarcophagi. c. 240-50. Sidamara technique.

ANKARA E. Museum, Two small fragments of architecture only.

1. (Fig. 16) H. 0,28; W. 0.36. White marble. Right-hand portion of a gabled aedicula with a bit of the top of the conch shell it enclosed and foliation in the spandrel. Upper section of the impost block and adjacent intercolumniation. What is left of the ornament, the mouldings and foliation with the large ovolo in the center of the impost block, closely resembles those on the sarcophagus from Selefkeh.

2. (Fig. 17) Small fragment, the right-hand section of an intercolumniation with the impost block, capital and part of the shaft of a column. A mass of marble shows the attachment of a figure to the background wall. The ornament is close to Rome A and Selefkeh. These two fragments may or may not belong together. Second quarter of the third century? Sidamara technique.

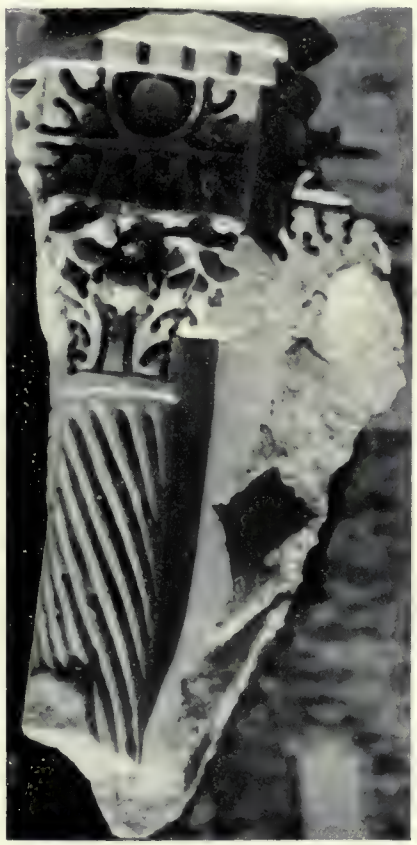

Fig. 17.

ANKARA F. Museum. (Fig. 18) H. 0.38; W. 0.37. Small fragment of the upper right corner of the front of a sarcophagus. A portion of a gabled aedicula enclosing a conch shell. Coloristic foliation ran up the raking cornice; coarse dentils and a row of egg-and-dart were below it and on the impost block. The piece is broken just above the capital. The bust of a fragmentary figure wearing a chiton and himation but whose head and body from the breast down are broken appears in front of the arch. The ornament, especially the isolated ovolo to the left of the head, should be compared with that of the right end of the front of the Sidamara sarcophagus. Second quarter of the third century. Sidamara technique.

BEIRUT. (Fig. 19). Found in 1935 in Rue Monnet, now in Museum, Inv. F 5130. Large fragment, comprising left half of long side. H. 1.07, W. 1.67.

Yellow-white marble, brown in discoloration. Daedalus, seated on a faldstool, of which the lower section is broken, holds a large wing upside down; both hands and left arm are broken although marks for the attachment show on the wing. He wears a himation draped over the left shoulder leaving his breast and right side bare to the waist, his left leg bare from the knee down. The bare left foot is on a separate fragment and is much whiter than the rest, retaining the original color of the marble. The right leg is missing from above the knee, although a small fragment adheres to the left knee, where it was attached. Another fragment projecting from the base of the column shows the position of the right foot. Daedalus' hair is rendered in flat waves, he is bearded and the face is intact except for the nose and upper lip. Icarus stands in the adjacent intercolumniation, nude except for two diagonal straps, to one of which the left wing is already attached. Both arms and the left leg from the upper thigh are missing, although the left foot is intact. The face is mutilated except for the left eye. The hair is in large plastic curls. The central aedicula contains a group of a beardless, curly-haired rider, nude except for a chlamys, which is fastened symmetrically at the center of his breast. The face is mutilated and his right leg missing from the upper thigh down. A running nude youth wearing only a shoulder strap to hold a weapon and with upraised left arm, turns his head back toward the right in the direction of the horse. Both legs are broken close to the hips, but fragments of the feet indicate their position. The left hand and right arm are broken, but a fragment on the column shows that the latter hung down straight. The horse rears. His hind legs are rendered in low relief behind the running youth. The right foreleg is missing from above the knee, the left foreleg, however, is intact in the next intercolumniation behind the column, a curious solecism which effectively arrests his forward movement. A flat object which may be a lion's skin is rendered in very low relief against the horse's shoulder. The head and mane are mutilated but the horse's left eye is intact (Fig. 46). The next intercolumniation to the right contains a bearded man heavily draped in a himation. This is the standing philosopher of Type 1. It is in excellent preservation except for the left foot, which is missing, the forefinger of the right hand and all the fingers of the left except the thumb. He holds

Fig. 18.

a rotulus in the left hand. His nose and forehead are injured. His hair is rendered in wide incised curls like the rider's.

Ornament. The colonnade resembles the Melfi sarcophagus with the unpedimented intercolumniations equal in width to the aediculae. Column bases, capitals and the sequence of mouldings in the entablature should also be compared with that sarcophagus, especially the treatment of the egg-and-dart, which

Fig. 19.

leaves the dart a heavy mass of stone scarcely cut out. The segmental conch with a uniform rim at the top and many scallops is also of the same form. The Beirut fragment, however, shows a conch above the intercolumniations and in this feature is like Sardis B and Rome D. One spandrel only retains its decoration, a small crouching lion with the head broken, at the right of the first arch. Pedestals have been placed under the figures in the aediculae but not in the intercolumniations and in this our sarcophagus is like the front of Rome D. From comparison with the sarcophagus at Melfi and the excellent classical style of the figures, the variety and plasticity of the hair techniques a date of c. 170 seems to be indicated. Lydian technique.

BRUSSA. Museum, Inv. 1038. (Fig. 20). Fragment, the central aedicula of the long side of a sarcophagus, broken at the base. The figure has been cut away, the stone attachment for the head alone showing against the conch. At some later date the block was reused as a grave stele and an inscription was carved. Hondius, *Anatolian Studies presented to W. H. Buckler* (1939) 99-102.

Fig. 20.

The architectural ornament closely resembles that of Denizli A and B and Sardis B. The incised leaves of the capitals should be compared with the former; the extremely round ovolo, isolated by a rim of heavy shadow and the thin incised dart with its high cross beam with the egg-and-dart moulding of all three examples. Finally the conch with many flutings and scalloped edge is very like that on Sardis B. From these comparisons and the sharp crispness of the cutting, I believe our fragment should be dated in the decade 180-190. Lydian technique.

DENIZLI D. Museum (Fig. 21). Small fragment of intercolumniation. H. 0.95; W. 0.57. The spirally fluted column at the left is broken off below the capital and above the base. A headless female figure stands in the position of Type 6, except that her left hand hangs down close to her body, holding a fold of her himation. Otherwise she should be compared with the second figure on the right end of Sardis B. The mouldings behind the woman also find their closest parallel on that sarcophagus and on the two fragments from Denizli now in the Louvre (A and B). Small differences, however, in the treatment of the dart and the Lesbian cymation make it seem unlikely that this comes from either sarcophagus. This fragment is so small that one cannot be sure of the architectural type but in all probability it was the principal one with three aediculae. c. 190. Lydian technique?

DENIZLI E. Tabakhanede ? (Fig. 22) H. 1.00; W. 0.85. Fragment, broken to left and right, comprising the central aedicula and the adjacent inter-

columniation of a long side. Bearded figure (poet) seated on a cushioned faldstool, of which the two front legs are broken, holding a scroll in his left hand. His face is injured. The muse (Thalia) stands at the right dressed in a chiton and a himation, which is draped over her head. Her face is broken, and both hands are gone; they seem to have been in the same position as those of the muse on Selefkeh. This group is type 13 and should be compared with those of Sidamara and Selefkeh. The poet is in the same pose except for the lowered left hand. The ornament is also like those two sarcophagi except for the normal egg-and-dart moulding. This rarely occurs with the Sidamara technique but is found on Athens A and Richmond. The cross bar of the dart here is higher and goes straight across, a form which has no exact parallel in the series. This fragment would seem to date somewhat after Richmond and Athens A and to be contemporary with Sidamara and Selefkeh, thus about 225. Sidamara technique.

Fig. 21

GROTTAFERRATA. Badia, Museum (Fig. 23). Two small fragments; 1. H. 0.61; W. 0.55. White marble. The nude torso of a man wearing only a chlamys, which hangs in a loop over his left shoulder and down over his left arm, stands between two spirally fluted columns. The capitals of these are broken just below the volutes but show the sawtooth acanthus characteristic of the Lydian technique. Two mouldings, the egg-and-dart and the Lesbian cymation, appear at the right beside the mass of marble which marks the attachment for the head. Both arms are broken and both legs across the thighs. Enough of the body is left however to show that the pose is that of type 3. It should be compared with the central figure on the front of Sardis B, with the third one on the two ends of Melfi and with Ostia B.

Fig. 22.

2. H. 0.20; W. 0.26 front; W. 0.175 end. A fragment of the right corner

entablature of one of the long sides. This shows the beginning of a flat, segmental arch and four mouldings, reading from the bottom up, the Lesbian cymation, egg-and-dart, dentils and a flat palmette. The latter shows the drill holes and characteristic " string-bean " technique around the corner but not on the front. A lion formed the acroterion motif. He is facing left, i. e. the front of the sarcophagus and should be compared with the lion on the right corner of the back of the Melfi sarcophagus. The ornament also finds its closest parallel on that example; compare especially the solid dart of the egg-and-dart moulding

Fig. 23

and the leaves of the capitals of fragment 1. The Lesbian cymation on the other hand is of a form almost identical with that on Sardis C. c. 170-180. Lydian technique.

ISTANBUL B. Museum – Inv. 4257 (Fig. 24). Fragment of the narrow end of a sarcophagus. H. 0.68; W. 0.43. The draped torso of a figure holding an offering in the left hand, with the upper half of a bull, stands beside the enclosing frame of a tomb portal. A priestess with a bull appears on Athens A, a male figure with a bull on Denizli A and at Uskeles, where there are the broken remains of an animal which was probably also a bull. Ours resembles type 9 as it appears on Denizli A and Uskeles, in the folds of the chiton in the upper skirt and around the waist. The lower section is broken and replaced

by a curved base of stone so it is impossible to tell whether the skirt was long or short. If this is a male figure, a camillus, a priestess presumably balanced it on the other side of the portal as at Uskeles. The proportions of the grave portal are also closer to the latter than to the Sidamara examples, where the portal tends to shrink in height. The ornament, however, should be compared with that of Rome G and Sidamara. c. 225 ? Sidamara technique.

Fig. 24.

ISTANBUL C. From Kadiköy, now in the Museum. Inv. 3981 (Fig. 25). Fragment of two arches, possibly from the back or end of a sarcophagus like the Sidamara. H. 0.59; W. 0.47. A. Müfit, " Erwerbungsbericht des Antikenmuseums zu Istanbul seit 1914 ", *JDAI* 46 (1931) *AA* 176, fig. 5. A rider on a rearing horse and dressed in chiton and chlamys is in much the same position with bent left arm, as the second horseman on the back of the Sidamara sarcophagus, except that his head faces forward. The right arm, left hand and lower part of his body are lost as well as the muzzle of the horse and its legs, except for the upper part of the left foreleg which adheres to the background. Two arches behind the figure are filled with deeply fluted conch shells, and should be compared with the Sidamara sarcophagus, where also the foliation in the spandrels and the capital find close parallels. Archivolts, however, are omitted, and in this our fragment resembles Bari, New York and Ankara D. The placing of the horseman against the architecture, completely obscuring one capital, together with the extreme narrowness of the arches, makes it unlikely that this is a fragment of a sarcophagus of the five-arched type, where the architecture, although frequently overlapped, is always more of a frame enclosing the figures. As its closest similarity lies with the right end of the Sidamara sarcophagus where the arches are narrow and high and one carved capital is visible, it may be from the end of a sarco-

Fig. 25.

phagus of the principal type with three aediculae on the front. c. 225. Sidamara technique.

KONIEH B. (Iconium); Museum (Fig. 26). Trough of Sarcophagus, broken at left end.

Figured decoration. Front, left to right (1) standing female figure in chiton and himation, a fold of which she holds in her left hand. Head and right arm are missing. This is a variant of type 20 but with the right arm raised, and should be compared with Selefkeh, front 2, and the draped woman on the third fragment of Konieh A. (2) Draped female figure of which only the torso and part of the right arm remain. A large section of the right foot also adheres to the base. (3) Standing man in short tunic cuirass and chlamys, face mutilated, outstretched right arm broken beyond elbow, left hand missing. Although a little stockier this closely resembles in pose and costume the central figure on Konieh A. (4) Standing female figure in chiton with himation draped over her head repeating the type of (1), holds

Fig. 26.

a helmet in right hand. (5) Striding man in chlamys, head mutilated, right arm broken close to shoulder, left leg missing although the mass of stone for the foot adheres to the base. This repeats the fifth figure on the front of Konieh A. (Fig. 48). The central group may be interpreted as Thetis arming Achilles. *Right end.* Unfinished. Three figures roughly blocked out of the marble. *Left end.* I have been unable to obtain any information about this beyond what can be seen in the photograph, that the figure at the right is headless, the next one apparently intact.

Ornament. The columns have bases which closely resemble those of Konieh A but the shafts are heavier in proportion to their height. Capitals and mouldings are also more classical, our sarcophagus retaining the egg-and-dart above the Lesbian cymation. The form of this with a high, very pointed arrowhead and a round egg set off by a deep enclosing groove should be compared with the same ornament on Athens A, Richmond and the large sarcophagus in Ankara, A. Because of this and its retention of a plastic and classical style in the figures it seems to belong shortly after 200. Sidamara technique.

Fig. 27.

MANISA (Magnesia of Sipylos). Museum (Fig. 27). Fragment of upper section of central aedicula. Head and shoulders of a bearded man in a chiton with a himation draped over his left shoulder. Except that the head faces out, this follows type 2, and should be compared with the second figure on the right end of Selefkeh. The beard is long and divided into two sections as on the seated philosopher on the front of Ankara A, but the face is longer with a high domed forehead and the carving more cursory. Like Ankara A also is the treatment of the egg-and-dart and the Lesbian cymation, although the conch has fewer scallops, and the foliation on the gable is less clearly defined. It would thus seem to be Later than Ankara A or Konieh B, but earlier than Selefkeh or Sidamara. Third decade of third century. Sidamara technique.

OSTIA A. Found in Via delle Fontane, near the Porta Romana (Figs. 28-30). Three fragments, consisting of two terminal aediculae and one intercolumniation.

1. Broken at left side and at bottom shows a seated woman facing right on a faldstool of which the front legs are broken. Her head, breast and right arm are missing as well as the left hand and the toes of the right foot. This is

type 5, and should be compared with the seated woman on the front of Sardis B. Two-thirds of the curved pediment and the conch, the adjacent column and capital and a bit of the next intercolumniation are preserved. In the spandrel is a child with a fragmentary animal (lamb ?) 2. Intercolumniation with concave entablature against which is placed a standing male figure. He wears a himation tightly wrapped around him and is a repetition of type 1. The face and

Fig. 28.

Fig. 29.

lower legs are broken, together with the base of the column at the left. The figure should be compared with the first one of the right end of Sardis B and the fourth of the front of Rome D. 3. Seated man in himation, with both hands and the whole upper section above the ribs missing. He sits on a faldstool, whose legs are broken, but whose cushion and cover should be compared with those on Sardis B and Megiste. This seated man facing left is a new type (Fig. 45) but occurs also on the large sarcophagus in Ankara, A. A column broken at the base and through the volutes of the capital appears at the left.

Ornament. The form of the conch with many scallops and a narrow upper rim resembles that on Melfi and the Beirut fragment, with which also the egg-and-dart, dentils and « string-bean » technique of the flat palmettes on the sima should be compared. The capitals are very close. A slight variation occurs in the section of Lesbian cymation on fragment 1 on the impost block, where the dart is not cut out, and the inner part of the leaf assumes a diamond form. From these comparisons and the retention of classical style which is apparent in spite of the extremely fragmentary condition of the figures, a date at the beginning of the series is indicated.
c. 170. Lydian technique.

Fig. 30.

ROME L. Found in 1931-2 near Via Ostiense, now in Museo dei Conservatori. Inv. 2146. (Fig. 31). Two fragments of long side of sarcophagus. 1. H. 1.11; W. 2.40. 2. H. 0.43; W. 0,56; D. 0.34. Greek marble with large crystals. D. Mustilli, *Il Museo Mussolini* (Rome, 1939) 150–51, pl. 96, no. 356-57.

1. The central niche, now the left extremity of the fragment, shows a headless rider, nude except for a chlamys fastened against the middle of his breast, on a rearing horse. Another figure of which only part of the upraised left arm and right foot remain, stood or ran in front of the horse. The line of fracture on the body of the latter indicates the position of his left thigh. This group although extremely fragmentary is almost identical with the better preserved one in the central aedicula of the Beirut fragment (Fig. 46) and may be tentatively restored from it, although the running youth's head must have been further to the left, since the chlamys shows behind the torso of the rider and the body of the latter is in a more active pose, pulling back to counteract the forward movement of the horse. The intercolumniation contains a standing male figure, wearing chiton and himation and holding a scroll in his lowered left hand. Head, right hand and left foot are missing. This is type 1, and should be compared with the fourth figure on the fragment in Beirut, with Ostia A, 2 and Sardis B right end, figure 1. The himation here is held more tightly and makes a higher

"sling" for the right arm, the drapery is less schematic and more closely approaches the original Greek form of the Sophocles of the Lateran.[11] The terminal niche at the right contains a seated woman in excellent preservation except for the missing head and right hand. She holds a cloth ornamented with a fringe in her left hand, while a mirror with a long handle appears on the background wall to the left.[12] The faldstool upon which she sits is complete and shows the

Fig. 31.

form clearly with lion claws, and a cushion with a cover (possibly leather ?), which hangs in a straight line to the floor on either side. This appears in fragmentary form on many of the sarcophagi but can be seen complete on Megiste, where however the cover has a scalloped edge against the cushion. The seated

[11] Morey, *op. cit.* fig. 134. As early as 1901 J. Strzygowski in *Orient oder Rom?* 58 ff. pointed out the connection of our type with this famous statue.

[12] A similar round object with a handle appears beside the seated woman on the child's sarcophagus in Beirut cited above. Cumont, *Syria* 10 (1929) pl. 40, 2.

female figure facing to the left is a new type found in fragmentary form at Adalia and complete on Rome D and on the back of Ankara A, with which ours should be compared (Fig. 44). The upraised right arm emerging from the "sling" of the himation may originally have held a fold of the garment which was draped over the head as on the latter example. Of the right end, very little remains except a small bare foot.

Ornament. Pedestals appear under the figures in the aediculae but not in the intercolumniation. In this our sarcophagus resembles the Beirut fragment and the front of Rome D. Here however the treatment is much more elaborate. This consists in a cyma recta with a flatly incised, coloristic palmette at the bottom, then a large torus with a deeply cut and elaborate guilloche at the right, a conventional garland at the left. The latter is very close to the pattern under the terminal niches on the front of the Melfi sarcophagus, while the guilloche can be found under the central aedicula on the back. Both these designs also occur on the Hercules sarcophagus of the Torlonia collection, Rome G. Finally the cyma reversa shows a Lesbian cymation as on the other two sarcophagi. Like the Melfi sarcophagus also the volutes of the capitals are canted; they are almost flat on the Beirut fragment and very slightly canted at Ostia. Conch shell and the mouldings of the entablature furthermore are almost identical with Melfi, especially the egg-and-dart and Lesbian cymation. A peculiarity of our sarcophagus is, however, the large semicircular conch shell in the intercolumniation behind the head of the standing philosopher. There are no horizontal mouldings below this such as occur at Beirut, Smyrna and elsewhere when the conch appears.[13]

2. A small corner fragment, showing the terminal arch of one of the long sides. This retains the capital and the upper section of the shaft of the columns at the right. Around the corner a small conch and the mouldings of the entablature below it are all that remain. It illustrates even better the architectural ornament than the larger fragment.

From the above comparisons and the close adherence of this sarcophagus to the one at Melfi, it is clear that Mustilli is correct in dating it between 160-170, at the very beginning of the series. Lydian technique.

ROME M. S. Giovanni in Laterano (Fig. 32). Two small fragments plastered into wall of south walk of cloister. 1. H. 0.86; W. 0.38. The left side of a gable with conch shell, against which is the marble mass of a figure in the

[13] The drawing of Isnik B in Morey's book, fig. 34, gives a false impression of this feature as it omits the gable of the central niche. v. O. Wulff, *Altchristliche und byzantinische Kunst* ("Handbuch der Kunstswissenschaft", Berlin 1914) fig. 162, for a photograph.

pose of the muse Polyhymnia. A small section of the shaft of a spirally fluted column is in the lower right corner of the fragment. The surface of the figure is entirely gone except for a bit of drapery over the left thigh but the pose and large bun of hair at the back are unmistakable. The same figure, but reversed, appears in Rome I and Rome J, facing right on Rome E.[14] The head alone differs on the latter but as this is restored it probably originally conformed to the type and was in profile like ours. Little remains of the ornament, but this is also close to Rome E.

Fig. 32.

2. H. 0.50; W. 0.24. Section of tomb portal, deeply recessed. Part of the column at the right exists and the lower section of its capital. A projection of rough marble against this shows where the arm of the figure to the right was attached. Coarse dentils and two large isolated ovolos are all that remain of the entablature above the door. These resemble closely the ornament on the left end of Rome E, with which also the rectangular panel of the door should be compared.

First quarter of third century. Sidamara technique.

SARDIS C. Now in Museum, Princeton University (Fig. 33). Small fragment of arch and adjacent entablature. H. 0.20; W. 0.57. M. Lawrence, "A Sarcophagus at Lanuvium", *AJA* 32 (1928) 428 n. 1, fig. 10.

Fig. 33.

A shallow arch broken at the left shows three carved mouldings: reading from the bottom up, Lesbian cymation, egg-and-dart and dentils. The fourth of which a fragment shows at the extreme right of the piece was a flat and coloristic palmette. The stone attachment for the head of a figure projects slightly to left of center. The spandrel decoration is also broken away although two small pieces of marble

[14] Polyhymnia, who is at the extreme right, is cut off in Morey's plate of Rome J (fig. 90). See *Ancient Marbles in the British Museum* (London 1845) 10, pl. 44.

adhere to the background. Impost block and the mouldings of the intercolumniation show at the right. There is no conch under the arch, so this fragment could not have come from Sardis B. In this omission it resembles Rome B. The ornament on this fragment is very close to that on the small fragment from Sardis now in the Louvre (Sardis A), but differences in the marble preclude the possibility that they are parts of the same sarcophagus. The treatment of the egg-and-dart motif is also slightly different, as the Louvre fragment has two drill holes at the point of the dart, although both examples show a narrow strut connecting the ovolo with the marble fillet below it. Neither

Fig. 34.

of these peculiarities appear on Sardis B. A date contemporary with Sardis A thus seems to be indicated. c. 185-195. Lydian technique.

SMYRNA B and C. Allen Memorial Art Museum, Oberlin, Ohio, Inv. 40.39 (Fig. 34) Fragment of central gable and adjacent intercolumniation. H. 0.50; W. 0.805. Although this fragment is in Morey's book (Smyrna B and C) and reproduced in a drawing (Ill. 69), it seems wise to include it here, since it has in the meantime come into an American collection, where it has been carefully studied. Morey had three references but only one drawing and suspected that they might refer to the same fragment. To his bibliography should be added W. de Grüneisen, *Collection de Grüneisen, Catalogue raisonné* (Paris 1930) 44, no. 157 a, pl. 11, a; E. Capps, Jr. "A Lydian Sarcophagus from Smyrna and Recent Acquisitions", *Bulletin of the Allen Memorial Art Museum*, Oberlin

College (Oberlin 1945), 2, 53-69. The fragment, broken diagonally from the lower left corner to the upper right, contains the upper section of a bearded man, wearing a chlamys fastened symmetrically with a circular brooch, and a cap, which, although fractured, seems to have been a pileus. Capps identifies him tentatively as Odysseus and compares him with the first figure on the right end of Melfi, the second on the back of Megiste and the head on a small fragment in Vienna (Morey, Ill. 100). For the technique of the hair and the drilled pupil he cites the so-called Commodus in the Louvre. The ornament is close to Melfi; compare especially the palmette acroteria and the egg-and-dart. The small conch over the intercolumniation is, according to Capps, an attempt to suggest on the small ends the arch and gable composition of the front. It has, however, in the meantime, appeared on the large fragment in Beirut, so that this theory is no longer tenable. The intercolumniation is narrow and the conch small as on Sardis B; hence his conclusion that the fragment is from the end of a sarcophagus may well be correct. The volutes of the capital although fractured are slightly canted. There seems no reason to dispute Capps' date of c. 180. Lydian technique.

Fig. 35.

SMYRNA F. Museum, Inv. 278 (Fig. 35) Fragment of the right aedicula of the end of a sarcophagus. H. 0.905; W. 0.47. W. Hahland, "Bruchstücke Lydischer Saulensarkophage in Izmir", *JDAI* 63-64 (1948–49) *AA* 164-170, fig. 1. At the left is a section of a grave portal and the beginning of the central pediment. A very much damaged draped figure of a woman stands beside it, her right arm held tightly against her body in a "sling" of the himation. She is Morey's type 4 and should be compared with the woman in a similar position on the left end and with the fourth figure on the back of Rome D. The tomb portal here is higher

although not as naturalistic in scale as on Melfi. The ornament on the mouldings, the Lesbian cymation and the egg-and-dart particularly with the very round and isolated ovolo with a slight dot or strut of stone at the bottom, is very close to that on Smyrna C, D, with which also the grooving of the leaves of the capitals should be compared. c. 180-190. Lydian technique.

Fig. 36.

SMYRNA G. Museum, Inv. 277 (Fig. 36) Fragment of the central niche of a sarcophagus. H. 0.69; W. 0.55. Hahland, *op. cit.* fig. 2. A rider on a rearing horse with his right arm raised appears against a gabled aedicula. This is undoubtedly part of a hunting scene and is the rider of Morey's type 18, which appears on Athens A and the left end of Selefkeh. Of the horse only the body remains and part of the head, the man's lower right leg is broken, his right arm from the shoulder down although the attachment for it appears on the marble, and his face is obliterated. The short chiton, however, bares more of the thigh than at Selefkeh and the folds are more lively and naturalistic. The pose also is slightly more in profile than on the other examples. The ornament finds its closest parallel on Athens A. The egg-and-dart moulding although badly fractured retains the dart of the earlier form unlike Selefkeh. First quarter of the third century. Sidamara technique.

Fig. 37.

SMYRNA H. Museum, Inv. 279 (Fig. 37) Small fragment of architecture. H. 0.19; W. 0.235. Hahland, *op. cit.* fig. 3. Left hand section of the entablature of a gabled aedicula. Hahland suggests that this comes from the same

sarcophagus as Smyrna G but there are slight differences in the cutting of the ornament. The ovolo is rounder and without the small strut at the bottom; the dentils are longer and less widely spaced, the conch shell seems to be without enclosing foliation and the wilted palmette above, although similar, is not identical. First quarter of the third century. Sidamara technique ?

ARCADE TYPE WITH FIVE ARCHES

ANKARA G. Found in Yükseklik, now in the Museum (Fig. 38). Right-hand corner fragment, consisting of two arches of the long side and a section of the lateral face. H. 0.55; W. 0.96: lateral face W. 0.30. Gray marble. Feratlz, *op. cit.* (*supra*, p. 124) fig. 9.

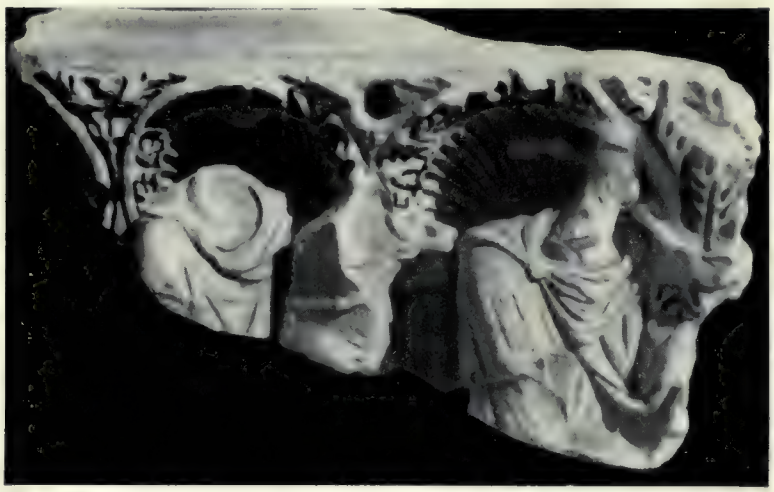

Fig. 38.

Front. In the niche at the left the headless bust of a male figure with a section of the mane and neck of a horse at his left. The horse's head is gone. The terminal niche at the right contains a headless figure wearing a chlamys fastened on his right shoulder over a chiton. What may be a stag's leg appears above his shoulder at the right. The architecture consists of two arches containing conch shells. Archivolts and spandrels are filled with coloristic foliage. A bit of the capital at the extreme right is visible. The design of the foliation in the spandrels resembles that on the fragment at Bari, the wreath in the central one the fragment of a muse sarcophagus in Berlin. The deep arches of slightly horseshoe form find close parallels on the ends of Rome I.

Right End. Only a small section of the architecture survives but it again consists of an arch enclosing a conch shell. The capital is broken but a portion of the spirally fluted column survives and the foliation of the spandrel. The archivolt is also filled with a foliate pattern. c. 250. Sidamara technique.

KNIN (Dalmatia). From Serniza (20 km. south of Knin), presumably from ancient Stridon, now in Museum of Croatian Antiquities (Fig. 39). Small fragment of the right corner of the front of a child's sarcophagus. H. 0.17; W. 0.24. J. Strzygowski, *ArtB* 7 (1924) 71; M. Lawrence, "A Sarcophagus at Lanuvium", *AJA* 32 (1928) 428 n. fig. 9. The fragment shows the upper half of a bearded man of type 2. He holds a scroll in the left hand. The hair and forehead are injured. A very flat segmental arch with a heavy archivolt filled with foliation contains a conch with not more than seven or eight deep scallops. The beginning of another such arch appears at the left. Segmental arches and the continuation of the archivolt across the impost block appear on Rome F and H. The heavy archivolt itself and its decoration are closer, however, to the fragment of a muse sarcophagus in Berlin. Dentils between the conch and the archivolt are unique in the series as well as impost blocks on an arched sarcophagus. The end is uncarved. The coarseness of the workmanship and the treatment of the conch indicate a date at the very end of the series. Second half of third century. Sidamara technique.

Fig. 39.

Fig. 40.

SMYRNA D. Found at Islamköy, near ancient Akmonia, now in Museum (Fig. 40). Fragment of left half of end of sarcophagus. H. 0.68; W. 0.50.

W. H. Buckler and W. M. Calder, *Monumenta Asiae Minoris Antiqua* 6 (1939) 118, pl. 60, no. 433.

The fragment contains the left terminal arch and half of the central arch of the left end of a five-arch sarcophagus. A standing man in chiton and himation is in the pose of type 1; his right arm is short and held tightly against his breast by the "sling" of the mantle. The position of the head and folds of the garment should be compared with the similar figure at Beirut, the pose of the right hand with the philosopher of the Ostia fragment A. The surface is badly worn and one can tell little of the features except that the man was bearded with curly hair, the general shape of his head closely approximating that at Beirut. The frame and console of a tomb portal appear at the right. A similar form occurs on the five-arch sarcophagus in the Torlonia collection, Rome G, where however, there are no conches, and on Rome D and Vienna. Those are all also of about the same proportion, the mouldings of the door frame coming above the shoulders of the flanking figures. The archivolt, decorated with the Lesbian cymation, should furthermore be compared with Rome G and Rome F. and, although somewhat more coloristic, with Rome H. The conch is omitted as on all Lydian examples of the five-arch type. The carved moulding runs continuously across the capitals and around the arches as on Rome F and H, but the spandrel decoration, a Medusa head, finds its closest parallel on the ends of Rome G, where, however, it is surrounded by leaves. The intrusion of the conch above the grave portal and its late character with very few scallops as on the fragment in Knin, the general simplification and coarseness of the cutting of the ornamental motifs, together with the summary treatment of the folds of the himation all point to a date even later than Rome N in the second half of the third century. Lydian technique.[15]

TYPE WITH HORIZONTAL ENTABLATURE

ANKARA H. Found in Yükseklik, now in the Museum (Fig. 41). Small fragment. H. 0.63; W. 0.61. White yellow marble. Feratlz, *op. cit.* (*supra*, p. 124), fig. 10. The upper section of an aedicula with a level entablature which contains a bearded man, wearing a short tunic, a cuirass with a general's sash, and a chlamys. He strides to the right but turns his head back in the opposite

[15] I have omitted from this list a small fragment in the Beccheria at Bari because, although it has parts of three arches with conch shells, there is not enough to left to show whether or not it belonged to an Asiatic sarcophagus. The architecture consists of very deep, high arches with plain archivolts with a single wreath in each spandrel. No capitals are left and no foliate ornament. Each arch held a figure; two heads remain but with the surface completely gone.

direction. His arms and legs are broken. On his shoulders sits an old man, clad in a himation, whose left hand and feet also are missing. This would seem to be Aeneas carrying Anchises. As a large section of the lower left-hand corner is missing entirely, there might originally have been a small figure of Ascanius at the right of Aeneas and holding his hand. The faces are too much injured to judge, but the costume of Aeneas closely resembles that of Achilles on Konieh B.

Fig. 41.

Ornament. The entablature from the top down shows the following designs: a wilted palmette of string-bean technique, dentils, egg-and-dart and the Lesbian cymation. Both capitals survive and parts of the spirally fluted columns. The incised leaves of the former and the form of the egg-and-dart are very close to similar motifs on Smyrna C, D. The latter ornament also with a heavy dart which is not cut out shows the same treatment as Melfi and Sardis A. c. 180. Lydian technique.

Fig. 42.

APAMEIA (Dinar). In the house of Osman Bey (Fig. 42). Fragment of three aediculae. H. 1.00; W. 0.85, W. H. Buckler, W. M. Calder and W. K. C. Guthrie, *Monumenta Asiae Minoris Antiqua* 4 (1933) 134, no. 363, pl. 71.

A very fragmentary figure of Hercules stands at the right. The attach ment for the head and feet shows their position. Part of the nude torso and left arm holding a lion's skin are all that remain. The next intercolumniation, the center of the fragment, shows Hercules striding to the left, his head turned backwards to the right. Both arms and his right leg are missing.

The attribute at the left is also broken, but may have been the Cretan bull; compare the second niche of Rome N. The niche at the right of the fragment shows a third figure of Hercules, fractured vertically down the middle and the left half gone. The right arm is bent at the elbow with the hand behind the hip in much the position of Hercules in the second niche of Rome N. These figures do not conform with the Hercules cycle on the other Asiatic sarcophagi, London and Rome F, G, and H, nor have I found close parallels for them on sarcophagi elsewhere. They should, however, be compared with the end in the Palazzo Mattei, Rome N, which is discussed below.

Ornament. Both the entablature and base are richly decorated, and should be compared with the Hercules sarcophagus in London. As on this example the entablature alternately projects and recedes, but the proportions of our fragment show narrower and higher aediculae, holding larger figures whose heads impinge against the mouldings. There are also no pedestals unlike London and Rome N. The mouldings on the base from the bottom up, are a weedy palmette, a section of guilloche interrupted by a section of meander, then another of guilloche; the upper design is the Lesbian cymation. These should be compared with those on the back of Melfi and Rome G. The entablature is also similar to the horizontal sections on the former sarcophagus but omits the egg-and-dart from between the Lesbian cymation and dentils. c. 200. Lydian technique.

ROME N. Palazzo Mattei (Fig. 43). Two fragments, the ends of a sarcophagus, plastered into wall above the south door leading out from the cortile. C. Robert, *Die Antiken Sarkophag-Reliefs* 3, 1 (Berlin 1898) 164-6, pl. 43, no. 141, 141′; Morey, p. 25; Lawrence, *Columnar Sarcophagi* fig. 62 and n. 126, p. 152. Morey excluded these from the series, on the basis of Robert's engraving, which misrepresents the capitals, and his statement that these ends belonged with the sarcophagus front then plastered into a house on the steps of Aracoeli (*ibid.* n. 54, p. 183). This confusion seems to have arisen because the ends were in the sixteenth century on the steps of Aracoeli, where Pirro Ligorio described the left hand one (H. D. Dessau, *SB* 27 (1883) 1089), whence they were brought to the Palazzo Mattei when it was built in 1616.

1. Left to right, a nude youth holding grapes in his left hand, a hare or ram in the right. This is a variant of type 3, striding forward and with the face turned slightly to the right. Then a dancing Bacchante with outstretched arms, the left one higher than her head. She wears a scarf which hangs over the left shoulder and across the right arm, part of it billowing above her head. The third aedicula contains another nude youth, almost a replica of the first except for the objects in his hands. As before these are difficult to identify. A bunch of grapes and a panther 's head are in his left hand, an animal's skin in the right,

which in this niche as in the first may be intended for a wine skin. In any case the most probable identification is of a Bacchus, Bacchante and satyr.[16] The pose of the two male figures may be compared with the Apollo Sauroktonos. The objects to the left of them seem to be tree trunks.

2. The other end has three figures of Hercules standing on pedestals which as Robert suggested may come from a lost cult statue. They are all three in much the same pose but hold different trophies. In the first two niches Hercules wears the lion's skin over his head, the legs knotted across his breast. The beardless head at the extreme right is a restoration, presumably of the early seventeenth century. The first Hercules holds an apple in the right hand, his

Fig. 43.

club in the left, thus referring to the apples of the Hesperides. The second shows the dead body of the Cretan bull at his left, while the third Hercules rests on the club in the right hand and holds the Nemean lion's skin in his left. These representations of the hero differ from others on the Asiatic sarcophagi, in that they show Hercules not in the act of performing his "Labors" but standing quietly after their accomplishment. The right end of Rome G however shows Hercules of the Augean stables and the apples of the Hesperides in a similarly quiet pose. Finally the pedestals may be compared with those under Hercules on the sarcophagus in London, which like ours is also of the level entablature type with the mouldings alternately "en ressaut" and receding.

[16] The heads on this end may all be restorations. Eichler in 1884 indicated that he thought so by putting a dotted line across the necks (Robert, *op. cit.* pl. 43, no. 141). The relief is placed so high that close examination even with the use of a ladder was impossible.

Ornament. The podium is undecorated but projects under each column, which in turn has a low base closer to Rome G than to the sarcophagus in London. The columns vary but are all heavier than on the latter example; the capitals are similar in reducing the echinus. The entablature itself is much more richly decorated with four carved mouldings separated by plain fillets. These follow the Lydian form but are carelessly cut and summary in treatment.

These features together with the coarse grooving of the drapery of the dancing figure, the monotony and repetition of the figure types, and the meaningless employment of formulae in the carving of the nudes, point to a date at the end of the series near the middle of the third century. Lydian technique.

Fig. 44.

SMYRNA E. Museum, Inv. 274, 275 (Figs. 44, 45) Two fragments of five bays of the long side of a sarcophagus. H. 0.92; W. 1.31: H. 0,89; W. 0.685. F. Eichler, "Zwei Kleinasiatische Säulensarkophage", *JDAI* 59-60 (1944-45) 125-128, pls. 10, 11.

1. A beardless male figure wearing a chiton which falls in a central cascade from a belt, tied in a knot over the middle of the abdomen, and a chlamys draped over his left shoulder and arm, stands at the left. Both legs from the knees down and the right arm from the shoulder are missing. The left hand is mutilated and apparently held an object now unidentifiable. The figure is similar to one on the fragment in Alashehr except that there the chiton blouses over the belt and covers it entirely. The camillus on Denizli A, however, wears a belt like this, the skirt of the chiton falling in a central cascade, but, as the figure is almost in profile, it is impossible to see the arrangement of the chlamys. In the adjacent niche to the right, a heavily draped woman bends over, her right foot resting on the column base, to lift a small child climbing up her legs. Her head is gone except for the attachment of the marble against the entablature and the whole left shoulder and arm. The child also is so fragmentary that one can tell only the pose of the lower half, and that it was nude. As the shoulders are broken, it is impossible to tell whether or not it was a cupid.

2. A woman seated on a chest faces to the right towards a man, clad in tunic and short chlamys, who is striding also to the right. A small child runs in front of him, his right hand raised towards the woman. The little body is almost entirely gone, but parts of the feet, right arm and head remain. He seems to have been clothed. Some object, now unidentifiable, hangs down from the man's hand. In the terminal niche at the left a seated man with a long

Fig. 45.

flowing chlamys faces the group, a dog seated in front of him. All the heads are fractured although their attachments are visible against the entablature. The chest should be compared with the one on which the woman sits on the right end of Ankara A. The general shape, scalloped cushion and curved handle are all similar. As Eichler points out, the seated woman is Morey's type 5. The striding man is my new type 27 found on the two sarcophagi at Konieh. Eichler calls the seated man Meleager, I suppose because of the dog, and suggests that the children are the youngest Niobids. Both interpretations appear highly unlikely. The theme is unique on the Asiatic series nor have I found anything

similar on sarcophagi of other types.[17] It may represent a family group to which a mythological significance was given as well.

Ornament. The mouldings closely approximate those on the fragment Denizli A already cited as a comparison for the chiton of the camillus. The " string-bean " technique of the wilted palmette at the top and the egg-and-dart moulding with a very round, isolated egg and sharply pointed dart are almost identical. The Lesbian cymation and the capital, however, differ slightly. The latter together with the egg-and-dart may be compared with Sardis B, the former with Melfi. The entablature and podium project in alternate bays, but unlike the fragment in London, the central and terminal bays project, not the intermediate, and the latter aediculae are slightly narrower. c. 175-185. Lydian technique.

FRAGMENTS OF INDETERMINATE TYPE

OSTIA B. Found in Via delle Fontane near the Porta Romana (Fig. 46). Small fragment of nude torso between two columns.

Fig. 46.

This was found at the same time as Ostia A but comes from another sarcophagus as the marble is slightly different with less grain. The man is nude except for a diagonal sword strap from the right shoulder to the left hip and a chlamys which is clasped over the left shoulder and draped over the left arm. This is type 3, and should be compared with the figure in the central aedicula of the front of Sardis B and the third figure on the two ends of Melfi. Since nothing remains of the ornament except small sections of the spirally fluted shafts of the columns, and the figure is so extremely fragmentary, there is little evidence upon which to base a conjecture of the date. If further fragments of the sarcophagus are discovered I should expect them to show Lydian technique and to be of approximately the same date as Ostia A.

[17] A woman and child in a similar pose to the one at the left appear on the cover of the large battle sarcophagus found in 1931 at Isola Farnese and now in the Terme Museum, inv. 112327. S. Aurigemma, *The Baths of Diocletian and Museo Nazionale romano* (1947) pl. 15. The woman bends over more and the child is lower but climbing up. The battle scene on the trough has been identified as the German wars of Marcus Aurelius.

XANTHOS. Now in British Museum, London (Fig. 47). Four fragments H. 0.52; W. 2.035; D. 0.96. A. H. Smith, *Catalogue of Sculpture, British Museum* 2 (1900) 62-3, no. 959; G. Rodenwaldt, "Sarcophagi from Xanthos", *JHS* 53 (1933) 181, pl. 13. The whole upper section has been lost and no figure is intact above the thigh. From the position of the feet, however, it is possible by comparison with other sarcophagi to a great extent to reconstruct the rest. The front, A, shows two nude legs in the first aedicula, a woman's skirts in the second and fourth, a pedestal in the third or central one and very fragmentary feet in the fifth. The terminal figures have been recognized as Dioscuri by Rodenwaldt who cites the Ankara sarcophagus in comparison. A closer parallel, however, is the front of the Selefkeh sarcophagus where one finds exactly the

Fig. 47 A.

same sequence, the Dioscuri with their horses (as these rear, their feet are above the line of fracture) and two standing women flanking a seated man whose faldstool rests on a pedestal. The other long side, D, presumably the back, is even more fragmentary but shows a foot in a high boot in the second niche, two male feet in the center, a long skirt in the fourth and a striding figure in high boots and wearing a chlamys in the fifth aedicula. This sequence is almost identical with that on the front of Konieh B. In consequence we may hypothetically restore the scene as Thetis arming Achilles, in which case the figure in the second niche might be Diomedes, as Rodenwaldt suggests, and in the fifth, Odysseus. The small end, C, has a grave portal with the base of an incense burner in front of it, as Rodenwaldt pointed out. This should be compared with the form on Rome D. The flanking figures stood on pedestals also as on that sarcophagus. The one at the left is completely gone; it could have been a priestess. The other, at the right, shows two male feet. The other small end, B, also places the figures on pedestals; the two outer ones wear high boots, the

central, a long female skirt. These might have been Artemis, Aphrodite and Meleager, a sequence that appears on the back of Melfi, although the artistic types there are different. Pose and composition more closely approximate the

Fig. 47 D.

trio on the right end of the latter sarcophagus, which have been called Diomedes, Helen and Odysseus. Obviously the same heroes would not be so presented twice on the same sarcophagus and Rodenwaldt himself points out the similar-

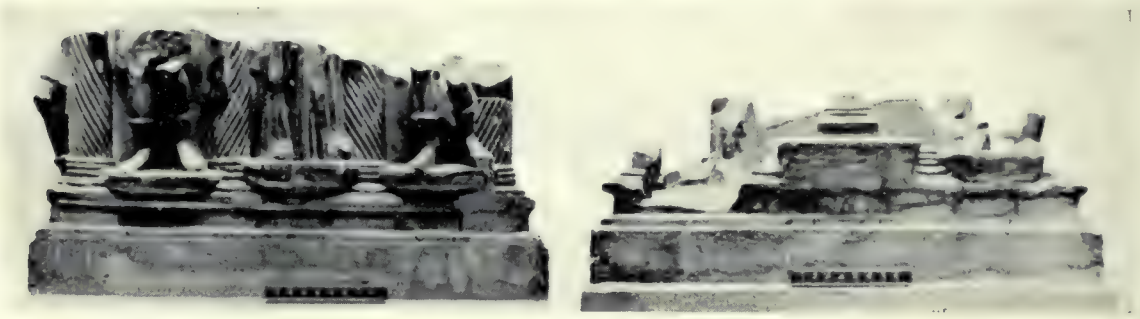

Fig. 47 B-C.

ity of the figure at the left to the Artemis of the Sidamara front. In view of the extremely fragmentary condition of the sarcophagus all these interpretations must of course remain hypothetical. The similarity is sufficient however to prove that the sarcophagus was one of the Asiatic series, although whether it was of Sidamara or Lydian technique, in the absence of the entablature, it is impossible to say. Two of the closest comparisons, Selefkeh and Konieh B

are Sidamaran. On the other hand, Rome D, and Melfi are Lydian and the polygonal pedestals of the short end B find their closest parallel on Sardis B. Rodenwaldt dates it c. 185-195 because of the "neatness of the workmanship" and the form of these pedestals.

TECHNIQUE

The new examples have been classified as Lydian or Sidamara technique according to the treatment of the ornament. The following supplements Morey's list:

LYDIAN TECHNIQUE

Ankara H	Grottaferrata	Smyrna B, C
Apameia	Ostia A	Smyrna D
Beirut	Rome L	Smyrna E
Broussa	Rome N	Smyrna F
Denizli D?	Sardis C	

SIDAMARA TECHNIQUE

Adalia	Denizli E	Rome M
Ankara A	Istanbul B	
Ankara B	Istanbul C	
Ankara C	Knin	
Ankara D	Konieh B	
Ankara E	Manisa	
Ankara F	Smyrna G	
Ankara G	Smyrna H?	

The following are too fragmentary to permit us to determine their technique: Ostia B and Xanthos. Adalia, fragment 5 may possibly be Lydian. Thus as in the original series the division between the two techniques is almost equal but slightly favors Sidamara, but the proportion of Lydian examples in Italy, four out of five, strikingly confirms Morey's theory of an exporting workshop.

FIGURE TYPES

The repetition of figure types is obvious. To Morey's list of examples the following should be added.

LYDIAN TYPES

(Abbreviations RLF – right lateral face; LLF – left lateral face; the numerals indicate the position of the figure in the sequence from left to right. An asterisk denotes Sidamara technique). Morey's plates, fig. 105-123 are cited and the numbers are his.

1. Bearded standing figure, the " philosopher " type, in chiton and himation (Fig. 105).

Ankara *RLF 3 (the head gone); Beirut, 4 (head gone); Ostia A, 2 (head gone); Rome L, 2; Smyrna D.

2. Bearded standing figure holding rotulus, in chiton and himation (Fig. 106) Ankara A*, RLF 1 (head gone); Knin* (broken at waist, head mutilated); Manisa (only the bust and head remain).

3. Standing ephebe, chlamys draped over left shoulder and arm (Fig. 107). Grottaferrata, Ostia B; Rome N. 1, 3 (a variant in which the figure strides forward); Adalia* fragment 1, 2 (very fragmentary and weight reversed).

4. Standing female, in chiton and himation veiling head (Fig. 108). Adalia* 1; Ankara A*, back 4; Smyrna F.

5. Female figure seated on faldstool, in chiton with himation veiling head (Fig. 109); Smyrna E.

Ankara A*, RLF 2 (a circular seat is substituted for the faldstool); Ostia A, 1.

6. Standing female figure in chiton and himation (Fig. 110).

Adalia*, fragment 2 (only the lower half of the body remains and the surface is injured); Ankara A*, LLF 1 (right arm changed); Denizli D (head gone).

9. Camillus in girdled chiton (Fig. 113).

Istanbul B*.

11. Priestess by tomb portals (Fig. 115).

Adalia*, fragment 4 (upper part only). The tomb portal appears on Ankara A, Istanbul B, Rome M, Smyrna D and probably also on Adalia, fragment 4.

SIDAMARA TYPES

13. Poet-and-muse type. Bearded figure in chiton and himation seated on a stool with draped woman standing before him (Fig. 117).

Ankara A, front, 1, 2 (both heads gone and right arm of man changed), Denizli E (woman's right hand changed).

18. Group: Standing youth and mounted huntsman in chiton and chlamys (fig. 121).

Smyrna G (rider only).

20. Standing female figure in chiton and himation (Fig. 123).

Ankara A, front 4; Konieh B, front 1 and 4 (the right arm changed in both cases).

Fig. 48.

NEW TYPES

To these may be added the following new types which appear on more than one of the series.

23. Female figure seated on a faldstool, in chiton with himation veiling head and held by her right hand, her left arm resting across the body on her lap (Fig. 48).

Ankara A*, back 3; Adalia* fragment 1, 3 (head gone); Rome D, front 5; Rome L 3 (head gone, left hand changed slightly).

Fig. 49.

24. Bearded figure, wearing chiton and himation, seated on a faldstool, his right arm bent and held close to his chin, his left extended across the body holding a partly open rotolus. (Fig. 49).

Ankara A*, front 5; Ostia A, 3 (both arms and the head are broken).

25. Group: Rider, nude except for chlamys on a rearing horse, a nude youth facing right and with outstretched left arm running beside him (Fig. 50).

Beirut 3; Rome L 1 (very fragmentary, head and legs of rider and all of running youth except upraised arm gone).

26. Bearded standing figure in chiton and himation, a fold of which is brought across the body and held by the left hand, right hand hanging at side (Fig. 51).

Fig. 50.

Ankara A* back 2, front 3; Sardis B, front 5 (head turned to left); Ismid end (head gone).

27. Man striding to the right wearing boots and a chlamys, the latter fastened on his right breast with a section looped over his left arm (Fig. 52). Konieh A, front 5 (head gone); Konieh B, front 5 (head gone); Smyrna E, front 4 (head gone).

The hunting scene of the back of the Sidamara sarcophagus may now likewise be added as a new type since Ankara D repeats part of it. Istanbul C is also similar to the second horseman except for the position of the head.

Interesting subjects which appear on the new material but of which only one example in each case has come to light are the following. I have added where possible a few comparisons which may cast light on their origin.

AENEAS carrying Anchises on his shoulders.

Ankara H.

Aeneas wearing a cuirass carries Anchises on his left shoulder on the relief on an altar of the time of Augustus found in Carthage and on a fresco in Pompei.[18] Anchises is smaller and almost like a mummy on a relief in Budapest where Aeneas again in armor leads Ascanius by the other hand.[19] Bernini's group in the Villa Borghese may easily have been inspired by a Hellenistic version of the theme.

BACCHANTE, dancing with outstretched arms and a scarf billowing over her head.

Rome N, 2.

This finds its closest parallel on a marble relief in Sagalassos. The same figure but reversed appears also on the bronze reliefs of the *tensa* or chariot of the Museo Conservatori, probably to be dated in the mid-third century.[20]

Fig. 51.

[18] M. Rostovtzeff, "Augustus", *RM* 38-39 (1923-24) 293 ff., Bei. 3; *CAH* Plates, 4, 176

[19] S. Reinach, *Répertoire de reliefs grecs et romains* (Paris 1912) 2, pl. 120, 1.

[20] K. Lanckoronski, *Städte Pamphyliens und Pisidiens*[2] (Vienna 1892) 141, fig. 110. H. Stuart Jones, *The sculptures of the Palazzo dei Conservatori* (Oxford 1926) pl. 72, 1.

DAEDALUS preparing wings for Icarus.

Beirut 1, 2.

This is very close to the well known relief of the Villa Albani.[21] Since so much of the latter is restored Daedalus may well have worn only one wing as here. He already is equipped with both wings on the column of the Porte Noire at Besançon and on a sarcophagus in Messina.[22] In both cases Daedalus sits at the left with outstretched arm and Icarus is gigantic.

Fig. 52.

HERCULES, Labors.

Apameia, 1, 2, 3; Rome N, 4, 5, 6. On the latter are the Apple of the Hesperides, the Cretan bull and the Nemean lion.

Odysseus ? wearing the pileus.

Smyrna B, C.

See Capps' discussion, cited above.

Polyhymnia.

Rome M.

Morey has already discussed the origin of this type.[23]

Thetis arming Achilles.

Konieh B. This subject also appears on Konieh A but Achilles there is seated.

Unidentified woman bending over to lift a small child who climbs up her legs.

Smyrna E.

[21] T. Schreiber, *Die hellenistischen Reliefbilder* (Leipzig 1894) pl. 11. A second relief in the Villa Albani, Alinari photograph 27607, is in better preservation but shows Icarus before his wing was attached, a version which also occurs on a rel ef in the collection of Mr. George Baker, which was exhibited in 1950 at the Cent ry Association of New York City and which is published with a photograph in their catalogue (no. 63).

[22] Vaissier, *Les colonnes à figures de la porte noire* (Paris 1902) 9. Robert, *op. cit.* 3, 1, pl. 11, n. 37.

[23] Morey, *op. cit.* 64.

CHRONOLOGY

The new examples have been dated as precisely as their evidence, fragmentary in only too many cases, has permitted. Our results are summarized below.

c. 160-170	Rome L, Ostia A.
c. 170	Beirut.
c. 170-180	Grottaferrata.
c. 180	Ankara H, Smyrna C, D.
c. 175-185	Smyrna E.
c. 180-190	Brussa, Smyrna F.
c. 190	Denizli D.
c. 185-195	Sardis C, Xanthos.
c. 195-200	Ankara A.
c. 200	Apameia, Konieh B.
First quarter of third century	Adalia, Rome M, Smyrna G, Smyrna H.
c. 225	Ankara C, Denizli E, Istanbul C, Manisa.
Second quarter of third century	Ankara B, Ankara E, Ankara F.
c. 240-250	Ankara D.
Middle of third century	Ankara G, Rome N.
Second half of third century	Knin, Smyrna D.

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